116 Huntington Avenue

FINAL

Environmental
Impact Report
EOEA #5777

PROJECT PROPONENT

Urban Investment and Development Company

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116 HUNTINGTON AVENUE PROJECT

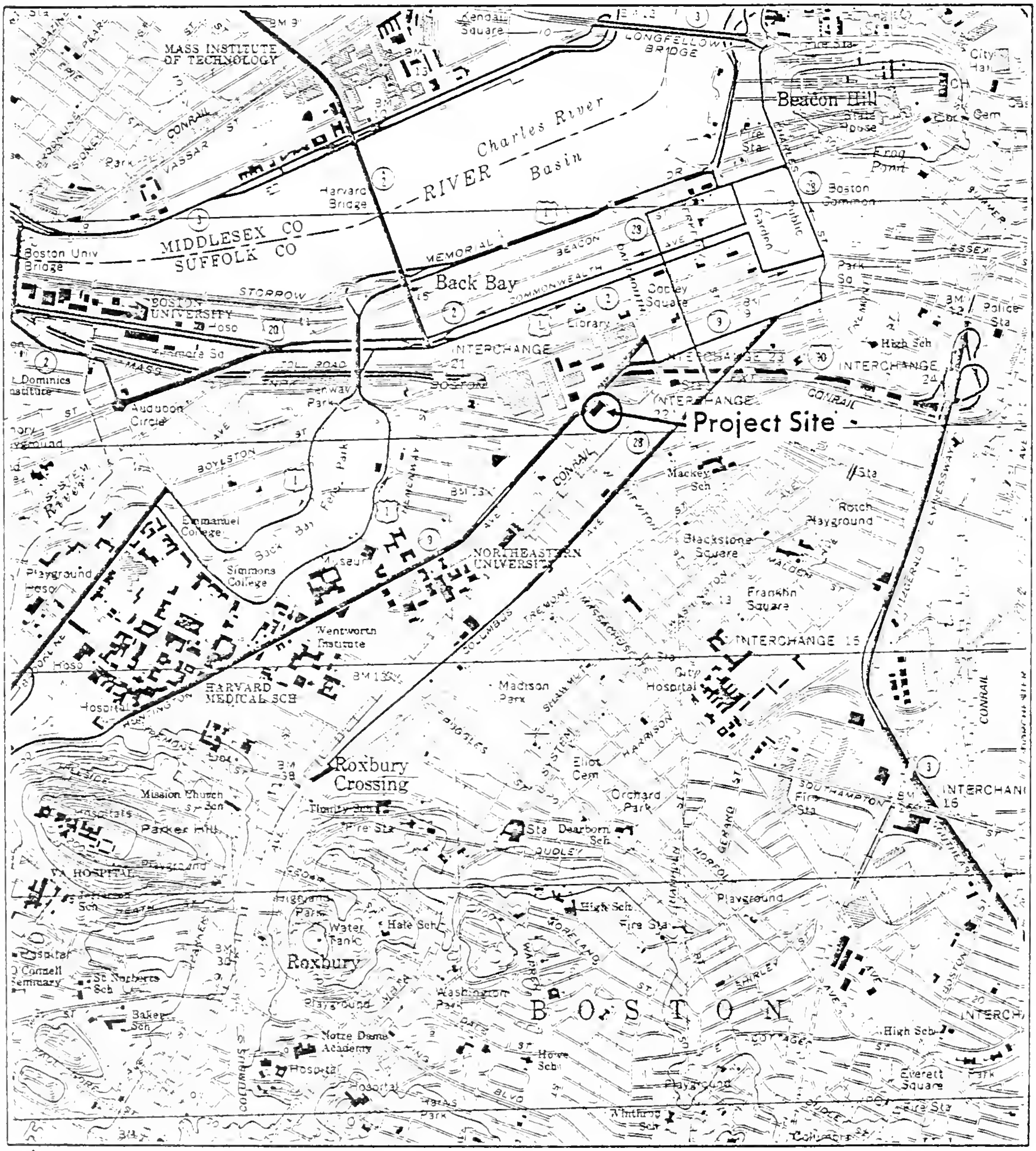
The 116 Huntington Avenue Project proposes the development of an office building on a site bounded by Huntington Avenue, Harcourt Street, Garrison Street, and Public Alley 401. Located adjacent to the Copley Place Marriott Hotel, the Project will also include retail uses on the first floor and three levels of below-grade parking.

Currently, a portion of this approximately 20,000 s.f. site is leased from the Massachusetts Turnpike Authority (MTA) as part of the Copley Place air-rights lease, and a small portion is owned by the Boston Redevelopment Authority. The site is used exclusively by employees of the Proponent on an interim basis as a surface parking facility for approximately 48 cars. The proposed undertaking will fill this vacant parcel, which was cleared in the early 1960s as part of the construction of the Massachusetts Turnpike Extension.

The goals of the Project's design are to establish a building that responds positively to its urban context, creates an attractive at-grade pedestrian environment, and adds to the interest and texture of the built environment with a commitment to quality design and materials. As such, the building is planned to respond to the commercial development along Huntington Avenue by providing a transitional element between the Marriott Hotel and Colonnade Hotel. In addition, the building is designed to relate to the adjacent St. Botolph Historic District by utilizing architectural elements which draw upon those in the district and by establishing a sympathetic edge to the district on Garrison Street.

When completed in 1989, the Project will include approximately 271,500 gross s.f. of office space with approximately 6,500 gross s.f. of retail space fronting on a street-level pedestrian arcade facing Huntington Avenue. Approximately ninety-four parking spaces constructed on three below-grade levels are also planned. Entry to the garage will be on Garrison Street with loading and receiving occurring from an entrance off Harcourt Street.

EXHIBIT I-1
Locus Map



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PROPONENT	Urban Investment and Development Company
DOCUMENT STATUS	Final Environmental Impact Report EOEA #5777

ORGANIZATION OF THE FINAL EIR

The Final EIR for the 116 Huntington Avenue Project is presented here as a single volume which addresses both the comments of the Secretary of Environmental Affairs on the previously submitted Draft EIR, as well as the comments of other public agencies and private citizens. As was the case in the Draft EIR, Chapters I, II, and III of this Final EIR contain general project information including a summary, a project and area description, and a description of the development alternatives.

Chapter IV of this Final EIR contains analyses of specific environmental issues which were identified in the Secretary of Environmental Affairs' Certificate on the Draft EIR. These issues are addressed within subsections entitled Transportation, Visual Quality, and Geology and Groundwater. Other environmental topics, including Historic Resources, Wind, Shadow, Water and Sewer Service, and Construction, are addressed in Chapter IV of the Draft EIR, and are summarized in Chapter I of this Final EIR. Further discussion of these issues can also be found in Chapter VI, Comments and Responses, of this Final EIR.

Chapter V contains a listing of measures to mitigate potential adverse effects of the Proposed Project. This includes those measures identified in the Draft EIR and additional measures developed since the submission of the Draft EIR.

Chapter VI contains all comment letters received by the Secretary of Environmental Affairs in response to the Draft EIR. For each comment letter, the chapter includes a copy of the original letter, a summary of the principal comments of the letter, and a response to each summarized comment.

Chapter VII lists all city, county, and state agencies as well as other interested parties to whom this Final EIR is being distributed. This list includes those entities listed in the MEPA regulations, as well as other pertinent agencies, groups, and individuals--a number of whom have commented on or requested the Draft EIR or the Environmental Notification Form for this project.

Chapter VIII, Appendices, includes MEPA documents and technical material supplementing the discussion of the environmental issues addressed in Chapter IV.

DEVELOPMENT ALTERNATIVES

NO-BUILD ALTERNATIVE

The No-Build Alternative assumes the continuation of the existing use on-site--a surface parking facility with access from Garrison Street. The lot is presently used during the day exclusively by employees of the Proponent for parking of approximately 48 cars. For pertinent portions of this analysis, the evaluation of this alternative includes consideration of background development that is expected to occur off-site within the vicinity of the Project by the year 1989.

116 HUNTINGTON AVENUE PROJECT

This is the Proposed Project. It entails construction of a 16-story office building standing 200 feet to the top of the highest habitable floor and containing retail space on the ground floor. The Project features a street-level retail arcade which has been designed to enhance pedestrian activity on Huntington Avenue. Approximately ninety-four parking spaces on three levels below grade will be provided for use by Project tenants. Gross square footage above-grade for this building (excluding penthouse mechanicals) totals approximately 278,000 s.f.

LOW-BUILD ALTERNATIVE

This alternative is being studied in response to the Secretary of Environmental Affairs Scoping Letter of December 12, 1985, which requested that a 12-14 story

building be studied in the Draft EIR for this Project. The Low-Build Alternative is included in this Final EIR for the purpose of comparison with the Proposed Project. The Low-Build Alternative is a 12-story office building that stands 152 feet to the top of the highest habitable floor and contains approximately 216,000 gross s.f. of space above-grade. Its program consists of office space on the upper floors and retail space on the ground level. Below-grade parking is also included in this plan. As a result of discussion with MEPA, the environmental impact analysis for this alternative has focused on design-related issues, including visual quality, historic resources, wind, and shadow.

SUMMARY OF ENVIRONMENTAL ISSUES

The environmental effects of the 116 Huntington Avenue Project, the Low-Build Alternative, and the No-Build Alternative are summarized below based on analyses performed for the Draft EIR and the Final EIR. Chapter IV of this Final EIR should be referred to for discussion of Transportation, Visual Quality, and Geology and Groundwater. These topics are addressed in response to the Secretary's Certificate on the Draft EIR and other comments. Discussion of Historic Resources, Wind, Shadow, Water and Sewer, and Construction can be found in Chapter IV of the Draft EIR, and in Chapter VI of this Final EIR in response to comments.

TRANSPORTATION

Analysis of the effects of the Proposed Project on traffic operations was presented in the Draft EIR and has been supplemented in this Final EIR. This analysis indicates that the Proposed Project will not substantially affect traffic operations in the study area. Without implementation of various mitigation measures identified in this Final EIR, three of the thirteen intersections assessed within the study area are expected to experience a decrease in level of service (LOS) during the morning peak hour, and one intersection is expected to experience a decrease in LOS during the evening peak hour.

Although a number of study area intersections are expected to experience congestion in 1989, these conditions are associated with existing development, existing roadway deficiencies and various background development projects planned for completion by that date. The Proposed Project represents only a small increment in the overall 1989 traffic system in the study area.

A range of measures are identified to mitigate impacts primarily associated with existing conditions and background developments. Analysis indicates that various alternative directional changes may be effective in reducing cut-through traffic in the St. Botolph neighborhood. Other mitigation measures include traffic operation improvements and demand/reduction management strategies. Analysis of the effect of these mitigation measures indicates the potential for substantial improvement in area traffic operating conditions.

The Project proposes a garage entrance from Garrison Street, the location of the current access point for the existing at-grade parking lot. Analysis of the alternative of gaining access to the garage from Harcourt Street indicates that although some benefit would be gained in terms of reducing use of Garrison and St. Botolph Street during evening hours, a variety of operational factors indicate that the use of Harcourt Street would be impractical. However, circulation options, such as one way streets, can be utilized to minimize any potential effect of a Garrison Street entrance on the St. Botolph Street area.

Analysis of parking supply and demand indicates that some project-related parking will take place in other study area parking facilities. Due to the high cost of parking, however, it is likely that some employees who might otherwise drive would shift to transit usage. Projections regarding increased transit usage resulting from the project indicate that increased volume on the MBTA transit system represents a 0.4 percent increase over the transit ridership levels under the No-Build Alternative. It is anticipated that by 1989, the transit system will have adequate capacity to handle this small increase in ridership.

VISUAL QUALITY

Impacts of the Proposed Project and the Low-Build Alternative on the visual quality of the project area were analyzed in the Draft EIR through a series of computer-generated project views taken from seven representative, publicly accessible vantage points surrounding the site. Findings from that study and further analysis conducted for the Final EIR indicate that the height and bulk of the Proposed Project provide a clear transition from the high-rise to the more moderate-height structures along Huntington Avenue. The aesthetic effect of introducing the moderate overall scale of the Project at the edge of the lower-rise St. Botolph District appears minimal due to the presence of numerous high-rise buildings nearby that are visible in the district, and due to the appropriate measures incorporated in its design, which include a selection of materials, massing configuration, and facade articulation that relate to the historic district.

The Low-Build Alternative was studied for purposes of comparison with the Proposed Project. In summary, this 12-story alternative appears out of scale with most of the high-rise structures that characterize development on Huntington Avenue. This alternative is less visible within the St. Botolph neighborhood and provides a suitable transition to this low-rise context.

In response to comments of the Secretary of Environmental Affairs as well as those of other interested parties, this Final EIR provides further information relating to visual quality and urban design issues. This includes a discussion of programmatic and design objectives which led to the massing of the Proposed Project and Low-Build Alternative, and a discussion of the regulatory context of the Project, focusing on zoning, the anticipated Interim Planning Overlay District, and the Public Improvement Commission Approval required for the proposed pedestrian arcade.

HISTORIC RESOURCES

The massing and details of the Proposed Project have been designed to respond sympathetically to the historic context of the neighboring area. This context

includes the adjacent St. Botolph Area Architectural Conservation District, an area recognized by the Boston Landmarks Commission and Massachusetts Historical Commission for its architectural and historical significance. The district runs the length of St. Botolph Street from Massachusetts Avenue to Harcourt Street, and is primarily noted for its intact late 19th century residential architecture.

Aspects of the development which respond to this context include the stepped elements which reduce the apparent massing, the use of architectural elements and building materials which draw from those found on surrounding buildings, and, in particular, the clearly defined low-rise base and cornice which correspond to Garrison Hall.

The Low-Build Alternative has not been designed to the same level of detail as the Proposed Project. However, for purposes of comparison with the Proposed Project, a conceptual sense of massing and facade treatment has been developed. Due to the site's location outside of the historic area, neither the Proposed Project nor the Low-Build Alternative affects the integrity of the district's unity, rhythm, or cohesiveness. Both projects are visible from within the St. Botolph neighborhood, with the Low-Build Alternative somewhat less visible due to its reduced height.

The Secretary of Environmental Affairs' Certificate on the Draft EIR did not address historic resources. Any comments received from other interested parties concerning historic resources are responded to in Chapter VI, Comments and Responses.

WIND

For the Draft EIR, a series of wind erosion tests were conducted at the Wright Brothers Wind Tunnel at the Massachusetts Institute of Technology to evaluate both existing and project-related pedestrian-level wind conditions. Twenty-four stations at and around the 116 Huntington Avenue Project site were evaluated for each of the three development alternatives--No-Build, Proposed Project, and Low-Build Alternative.

The data for the existing conditions indicated that the site is generally comfortable at the pedestrian-level, with the exception of certain points at the Westin Hotel, the Marriott Hotel, and on the Christian Science Center plaza. With both the Proposed Project and the Low-Build Alternative, wind velocities at the site will remain at existing levels, or decrease slightly. Stations directly adjacent to the project site will benefit the greatest, while the more remote stations will remain unchanged. Some slight increase in overall wind levels was recorded for the Low-Build Alternative as compared to the Proposed Project, but this change was not significant enough to affect the Melbourne Category ratings of the site stations. For both build alternatives, 22 out of 24 stations recorded comfortable winds according to Melbourne ratings.

The Secretary of Environmental Affairs' Certificate on the Draft EIR did not address wind. Any comments received from other interested parties concerning wind are responded to in Chapter VI, Comments and Responses.

SHADOW

For both the Proposed Project and the Low-Build Alternative, a series of computer-generated shadow analyses were presented in the Draft EIR. Findings indicate that both alternatives result in some new shadow in the vicinity of the site. Due to the site's location north of the St. Botolph neighborhood, neither build alternative casts major new shadows onto this residential area or on historic structures. Public space will be affected by partial shading from the Project only during the morning in the spring and during the morning and early afternoon in the winter. In all cases, the Proposed Project and the Low-Build Alternative generate shadows which are similar in terms of effects on public spaces, however, the shadows produced by the Proposed Project are slightly greater in length.

The Secretary of Environmental Affairs' Certificate on the Draft EIR did not address shadow. Any comments received from other interested parties concerning shadow are responded to in Chapter VI, Comments and Responses.

GEOLOGY AND GROUNDWATER

As reported in the Draft EIR, subsurface investigations were conducted within the site area to determine soil, rock, and groundwater conditions. The site is generally underlain by granular fill followed by organic silt, sand, and marine clay. The Proposed Project will be supported by a reinforced concrete mat foundation bearing on sand and structural fill at about 36 feet below existing grade. Walls of the proposed excavation will be constructed using the slurry method, which provides a great degree of lateral support, thereby minimizing the potential for adjacent ground movement. Because neither the concrete mat nor the slurry wall require pile driving, adjacent ground movement which might otherwise be associated with pile driving is not expected. The condition of nearby buildings will be surveyed and monitored in order to ensure that no structural effects result from construction activity.

Data recorded in on-site observation wells indicate that the building's foundation will extend below the existing groundwater level. The use of a slurry wall around the site perimeter will result in the creation of a continuous concrete diaphragm around the site, hydraulically isolating the excavation and minimizing groundwater seepage. This will ensure that drawdown of the area's groundwater level does not occur.

To ensure early detection of any groundwater level changes that may occur, the Proponent is committed to implementing a groundwater monitoring plan to occur before, during and after project construction, and to be developed in accordance with BRA requirements. Observation wells surrounding the site will be utilized to monitor groundwater levels. A draft groundwater monitoring agreement between the Proponent and the BRA is presented in Chapter IV C, Geology and Groundwater. It is understood by the Proponent that, as a result of further BRA input, revision of this agreement may occur prior to approval of it.

WATER AND SEWER SERVICE

As reported in the Draft EIR, the 116 Huntington Avenue Project will be served by a combined sanitary sewer system that presently drains an area bounded by the MBTA's Southwest Corridor, West Newton Street, Huntington Avenue, and Harcourt Street/Copley Place. It is estimated that the Proposed Project will generate approximately 20,000 gallons per day (gpd) into the combined sewer system. Analysis and consultation with the Boston Water and Sewer Commision indicates that this system can provide sufficient capacity to accommodate project related sewage flows and garage floor run-off. The Project's drainage system will be constructed to accommodate a separate storm and sanitary sewer system if such a system is constructed.

Water service will be provided to the project area through three independent systems: High Pressure Fire Service, High Service (for internal building fire protection systems), and Low Service (for domestic water supply).

High Service water supply will be limited to emergency use at a rate of 1200 gpm. Total peak low service water use is anticipated to be approximately 53,000 gpd. Discussions with the Boston Water and Sewer Commission indicate that the existing water supply system is adequate to meet Project needs.

Gas, oil, and grease separators will be used in the below grade garage. Low-flow toilets and flow restrictive faucets will be employed to reduce water demand and wastewater generation, as per Title V regulations.

The Secretary's Certificate on the Draft EIR did not address water and sewer service. Any comments received from other interested parties concerning water and sewer service are responded to in Chapter VI, Comments and Responses.

CONSTRUCTION

As described in the Draft EIR, the Proposed Project will entail no building demolition activity, and will be constructed on a mat foundation requiring no pile

driving. The excavation for the Project will utilize a concrete slurry wall which will provide lateral support sufficient to minimize adjacent ground movement, and which will also act as a concrete diaphragm around the site, minimizing groundwater seepage and related effects to the groundwater levels in the area. Trucks serving the site will utilize designated routes designed to avoid residential areas. Air quality and noise effects will result from contruction activities, but are expected to remain within regulatory limits. A variety of mitigation measures to minimize construction-related effects have been incorporated into the planned construction process, including a number of measures requested by community representatives during consultation held while the Draft EIR and Final EIR were in preparation.

PERMITS AND APPROVALS

The land on which the Project will be constructed will be leased to the Proponent by the MTA as part of the existing Copley Place lease. Because the Project will be located on land owned by the MTA, it is not subject to the Boston Zoning Code. Nonetheless, the Proponent intends to comply with the goals and objectives of that code. In addition, the Proponent expects to apply for the following permits, approvals, and reviews, pursuant to federal, state, and local law:

FEDERAL

- U.S. Environmental Protection Agency, National Pollution Discharge Elimination System Permit for Storm Water Discharge (if necessary).

STATE

- Massachusetts Executive Office of Environmental Affairs, MEPA Certification.
- Massachusetts Historical Commission, Determination of Effect on Historic Properties (by permitting agencies).
- Massachusetts Water Resources Authority, Industrial User Permit.

- Massachusetts Department of Environmental Quality Engineering, Sewer Connection Permit; Fossil Fuel Utilization Facility Approval (if necessary); Chapter 91 Waterways Licence (if necessary); Notification of Commencement of Project.

- Massachusetts Department of Public Safety, Flammable Storage License.

LOCAL

- Boston Air Pollution Control Commision, Parking Freeze Permit.

- Boston Public Improvement Commission, Discontinuance.

- Boston Redevelopment Authority, Development Impact Project Plan Approval, Land Disposition Agreement; Final Developer Designation.

- Boston Zoning Board of Appeal, zoning exceptions.

PROJECT DESCRIPTION

The 116 Huntington Avenue Project proposes the construction of a 16-story office building containing approximately 278,000 gross s.f. of office and ground floor retail space. The Project also proposes below-grade parking of approximately 94 spaces. Access to the parking garage will be from Garrison Street, with service and delivery occurring from Harcourt Street.

Located on Huntington Avenue, a principal artery dominated by large-scale 20th century development, and also situated adjacent to an historic residential district of 19th century rowhouses, the Project has been designed to respond to these two different urban environments. The building will consist of a granite and precast concrete low-rise base element with a street-level retail arcade. An articulated brick and limestone-colored precast concrete mid-section is highlighted by bay and bow windows, and two vertical elements rise from the mid-portion of the facade and culminate at the crown of the building. The Project proposes a building that fills a gap in the development corridor on Huntington Avenue with a transitional, 200-foot structure standing between the 385-foot Marriott Hotel and the 110-foot Colonnade Hotel.

In addition to constructing a building which is sensitive to its urban context, the Proposed Project seeks to enhance the visual quality of the area by eliminating a vacant parcel currently used as a parking lot, and by helping to create a cohesive streetscape along a principal pedestrian and vehicular corridor.

Construction of this office building is currently scheduled to begin in the summer of 1987 with initial occupancy expected in 1989.

SITE AND AREA DESCRIPTION

SITE DESCRIPTION

The project site encompasses approximately 20,000 s.f. and is bounded by Harcourt Street, Huntington Avenue, Garrison Street, and Public Alley 401 (see Exhibit II-1). Properties currently surrounding the site include the Marriott Hotel, the Colonnade Hotel, the Prudential Complex, Garrison Hall, and several smaller residential buildings.

The project site is currently owned by the Massachusetts Turnpike Authority (MTA) and the Boston Redevelopment Authority (BRA), and has been under this joint ownership since the early 1960s, when a portion of the site was acquired by the BRA as part of the Fenway Urban Renewal Plan. The site is located at the eastern edge of this renewal area, just south-west of Copley Square and adjacent to the recently completed Copley Place mixed-use development. Much of the planned urban renewal has been completed, however, a few sites including the Proposed Project site remain available for development.

The project site has been vacant for over twenty years, since the MTA acquired the parcel for the construction of the Massachusetts Turnpike Extension. In the recent past, it has been used for staging and storage of equipment during the construction of Copley Place and has now been converted to a surface parking facility for 48 cars. Access to the existing parking facility is from Garrison Street. At the time the Copley Place development was approved, it was contemplated that some form of commercial development would be undertaken at this site.

The proposed development of the project site entails the disposition of the currently vacant parcel to the Proponent for the construction of a commercial building. This development will result from the BRA transferring its portion of the site to the MTA, and the inclusion of this portion in the air-rights leased by the MTA to the Proponent under the existing Copley Place air-rights lease. The BRA's disposition is pursuant to a Memorandum of Understanding dated December 31, 1985 between the Proponent and the BRA. This agreement resulted from the Proponent's donation of twelve parcels of land to the BRA on the site known as "Tent City" (South End Urban Renewal Parcel II), the Proponent's construction of a two-level, 698-car under- ground garage on that site, the Proponent's agreement to set aside 129 parking spaces in the garage for use by residents of low and moderate income housing to be built on the Tent City site, the Proponent's agreement to construct the necessary foundations to support the housing portion of the Tent City development, and the Proponent's agreement to operate and maintain the garage for 30 years.

EXHIBIT II-1
Project Area Map

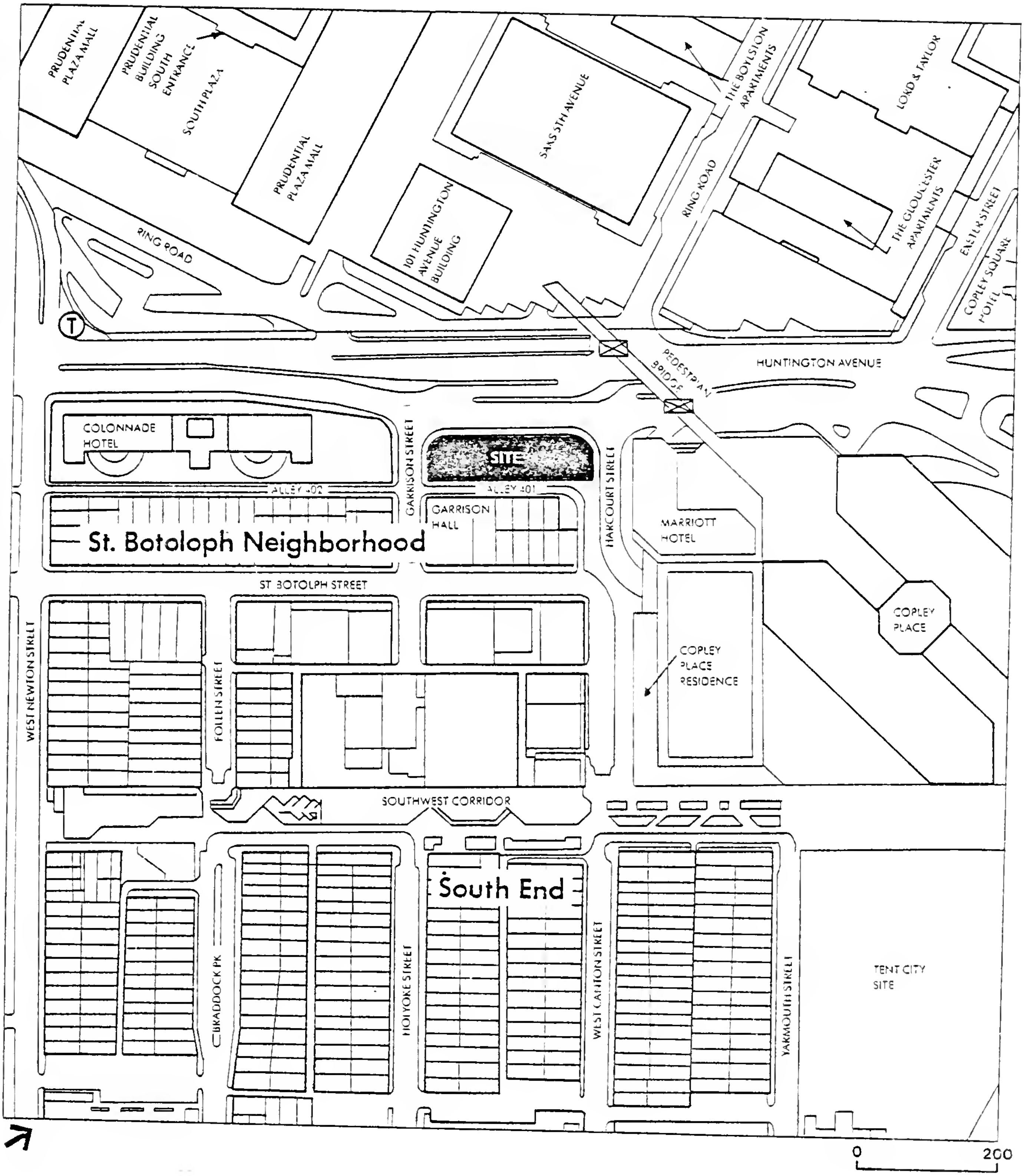
AREA DESCRIPTION

The 116 Huntington Avenue Project site is located south-west of Copley Square and adjacent to Copley Place at the eastern edge of the Fenway District. The project site lies within an area of filled land created at the end of the 19th century subsequent to the development of the South End and roughly contemporaneous with the filling of adjacent portions of the Back Bay, although by a separate entity pursuant to a separate land fill license from the Commonwealth. This area, roughly bounded by Copley Square, the Prudential Complex, Massachusetts Avenue, and the Southwest Corridor, was also functionally and physically separated from the Back Bay and South End by railroad lines that ran where the Prudential Center and Southwest Corridor are today. Due to these barriers, this area developed separately, containing a number of the city's major cultural institutions along with 3-4 story rowhouses and 5-7 story apartment buildings. During this period, Huntington Avenue was constructed, and it became the area's principal throughfare connecting two important nodes of public buildings--one at Copley Square and the other at the intersection of Massachusetts and Huntington Avenues.

During the 1960s, many changes occurred in this area. The first was the arrival of the Massachusetts Turnpike Extension. The construction of this highway system and its ramps involved demolition of numerous buildings immediately west of Copley Square along the south side of Huntington Avenue. Shortly thereafter in 1965, the Fenway Urban Renewal Plan was implemented. As a part of this plan, new development (with specific guidelines) was encouraged for vacant parcels along Huntington and Massachusetts Avenues. Notable development resulting from this plan included the Christian Science Center, the Colonnade Hotel, the Greenhouse Apartments, and the Church Park Apartments--all of which are in the Project's vicinity.

Today the project site lies amidst an area of contrast. Directly to the south of the site lies the St. Botolph neighborhood which remains a largely intact enclave of primarily 3-4 story masonry rowhouses representative of the area's turn-of-the-century residential development. Buildings in this area are generally well-maintained, and in recent years, many

EXHIBIT II-2
Site Context Map



have been substantially rehabilitated. Fronting on Huntington Avenue, the project site also faces a principal city street that historically has been an important urban corridor linking Copley Square and Massachusetts Avenue, and today extending west to Massachusetts Route 9.

Other development in the project area which is either currently underway or planned for completion by 1989 is described in Chapter IV A, Transportation.

DESIGN PROCESS

The alternatives analyzed in this Environmental Impact Report (EIR) were developed over the past year and a half as a result of discussion and consultation with staff of the Boston Redevelopment Authority (BRA) and members of the St. Botolph Citizens' Committee (SBCC).

An Environmental Notification Form (ENF) for the 116 Huntington Avenue Project was filed with the Executive Office of Environmental Affairs on October 31, 1985. At that time, the Proponent proposed the construction of a 31-story mixed-use building which stood 351 feet tall and contained 180 residential units, with retail and office space totalling 24,000 s.f. on the first two floors. Below-grade parking consisting of 180 spaces was also included in this initial proposal. In scale and massing, this proposal utilized a design which was intended to relate to the modern large scale development along Huntington Avenue, including such buildings as the Marriott Hotel (385 feet), the Prudential Tower (750 feet), 101 Huntington Avenue (305 feet), and the Christian Science Headquarters (280 feet). On December 12, 1985, the Secretary of Environmental Affairs issued a Scoping Certificate in response to the ENF. A broadly based EIR was scoped which required an analysis of three alternatives--No-Build, Low-Build (a 12-14 story building) and the Proposed Project as it existed at that time.

Over the course of the next several months, meetings were held with the BRA staff and representatives from the St. Botolph neighborhood. As a result, the project concepts were re-evaluated, and substantial changes were made in both program and design. By the time the Proponent received tentative developer designation from the BRA in December 1985, the redefined proposal called for construction of an 18-21 story building standing 250 feet to the top of the highest habitable floor and containing 300,000 s.f. of office and retail space with approximately 80 parking spaces below grade. This revised proposal, standing 100 feet less than the original one, utilized a number of design elements to reduce its visual impact upon the adjacent historic district. These included setbacks to reduce its sense of massing as well as the use of masonry materials and architectural features such as bay windows and projecting cornices corresponding to elements on buildings in the neighboring district. At the same time, since the building stood 250 feet tall, it was intended to serve

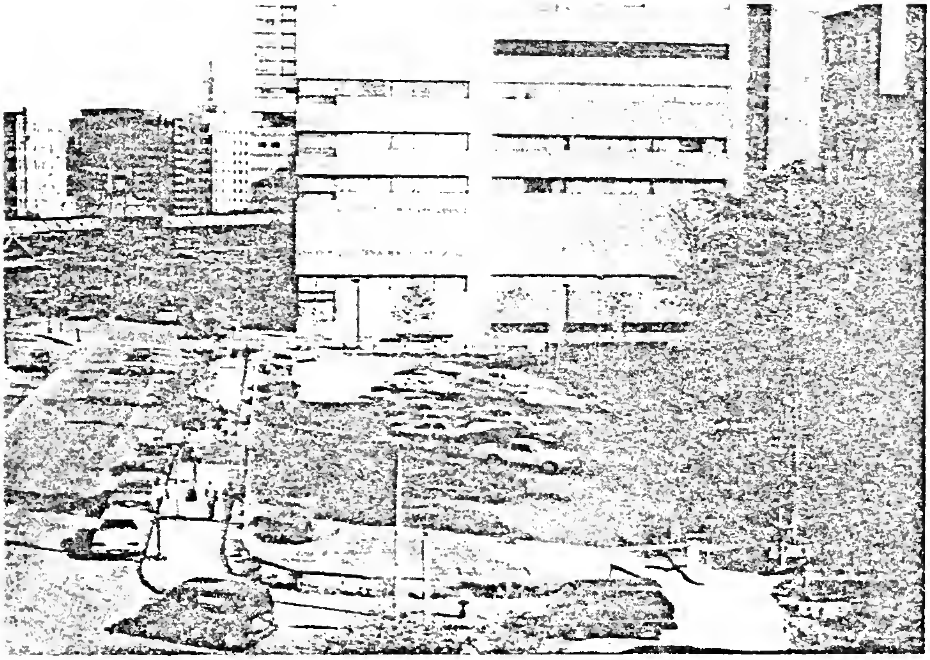
as a transitional, mid-rise structure between the Marriott Hotel and the Colonnade Hotel on Huntington Avenue.

Due to these changes in use, scale, and design, the Proponent filed a Notification of Project Change with the Executive Office of Environmental Affairs on May 29, 1986. Included in this document was a summary description of the new proposal, along with a recommendation that the EIR include additional environmental studies focusing on public transportation and construction effects. On July 3, 1986, the Secretary of Environmental Affairs issued a response to the Notification of Project Change, stating that a new scope for the EIR was not necessary, but concurring with the Proponent's recommendation for additional environmental studies.

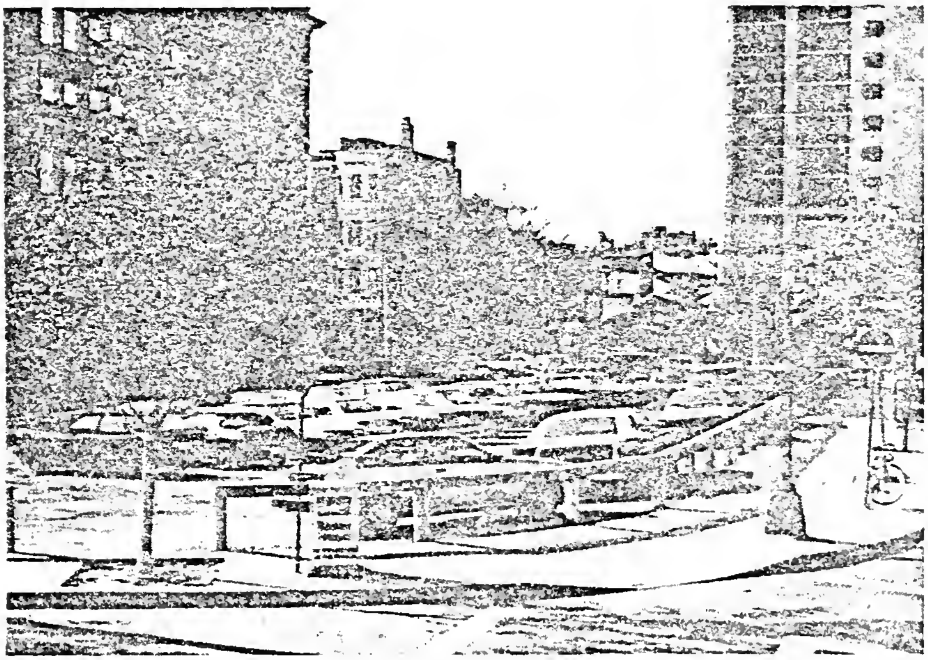
Between July 1986 and the submission of the Draft EIR in December 1986, subsequent meetings were held with the BRA staff and representatives of the St. Botolph Citizens' Committee. In response to the concerns of the St. Botolph Citizen's Committee, the Proponent has reduced the height of the building. In connection with this reduction, the Proponent has completely redesigned the building and has studied the implications of a 12-story building. In response to neighborhood concerns, the Proponent has also eliminated a pedestrian bridge to Copley Place, has made significant facade changes and has upgraded the arcade and changed the nature of the retail activity on the ground floor. The Proponent has also given special consideration wherever possible in the EIR to the neighborhood's concerns.

On December 10, 1986, the Secretary of Environmental Affairs issued a Certificate on the Draft EIR for the 116 Huntington Avenue project, a copy of which is included in Chapter VI, Comments and Responses, of this report. The Secretary's Certificate indicated the adequacy of the Draft EIR and presented the scope of study required for the Final EIR. This Final EIR is prepared in response to the Secretary's Certificate and to agency and commu- nity comment on the Draft EIR analyses. Consultation continues between the Proponent and representatives from the neighboring community and government agencies.

EXHIBIT III-1
Existing Site Conditions



From Colonnade Hotel, Fifth Floor



From Huntington Avenue at Harcourt Street

ALTERNATIVES

Project alternatives evaluated in both the Draft EIR and this Final EIR are described below.

ALTERNATIVE 1 - NO-BUILD

This alternative assumes the continuation of the existing use of the project site (see Exhibit III-1). At the present time, the parcel is an approximately 20,000 s.f. paved lot containing 48 parking spaces utilized during working hours exclusively by employees of the Proponent.

The site was acquired and cleared by the Massachusetts Turnpike Authority (MTA) in the early 1960s in conjunction with the construction of the Turnpike Extension. In 1965, the BRA acquired a portion of the site as part of the Fenway Urban Renewal Plan.

The purpose of including this alternative in the Final EIR is to present base-line conditions against which the other alternatives can be compared. For purposes of the transportation analysis, the evaluation of this alternative includes consideration of background development that is expected to occur within the vicinity of the Project site by the year 1989. This background development is described in Chapter IV A, Transportation.

116 HUNTINGTON AVENUE PROJECT

The proposed development involves the creation of a commercial building on a currently vacant and under-utilized lot on Huntington Avenue. The Project will contain 15 floors of office space, a retail arcade at street level, and below-grade parking (see Exhibit III-2 and III-3).

The proposed building is of steel frame construction sheathed in brick and highlighted by the extensive use of limestone colored pre-cast concrete. The structure will rise 16 stories (200 feet) to the top of the highest habitable floor, and contains approximately 278,000 gross s.f. above grade of office and retail space. The design features a five-story base defined by a projecting cornice that corresponds in height to the adjacent Garrison Hall building. The structure incorporates a number of setbacks designed to establish architectural interest, variety, and texture. Such features, used most noticeably at the 5th, 8th, and 13th stories, also reduce the building's apparent mass and add depth and definition to the two primary vertical elements on the Huntington Avenue facade. A below-grade parking garage will occupy three levels and contain approximately 94 spaces. Access to the garage will be via Garrison Street, with entry located at the southwest corner of the building. Truck service access will occur from Harcourt Street.

The approximate distribution of uses is as follows:

o	Office Area	271,500 gross s.f. (Includes Lobby)
o	Retail Area	6,500 gross s.f.
o	Parking	Approx. 94 spaces

Since there are a number of methods for calculating gross square footage, the gross square footage figures used here may differ somewhat from gross floor area as calculated pursuant to the Boston Zoning Code.

LOW-BUILD PROJECT

This alternative is being tested in response to the Secretary of Environmental Affairs' Scoping Certificate of December 12, 1985 that requested the evaluation of a "Low-Build" Alternative at a height of 12-14 stories. The alternative presents a development scenario that is similar to the 116 Huntington Avenue Project, but represents a reduction in height and program area.

EXHIBIT III-2
Ground Floor Plan

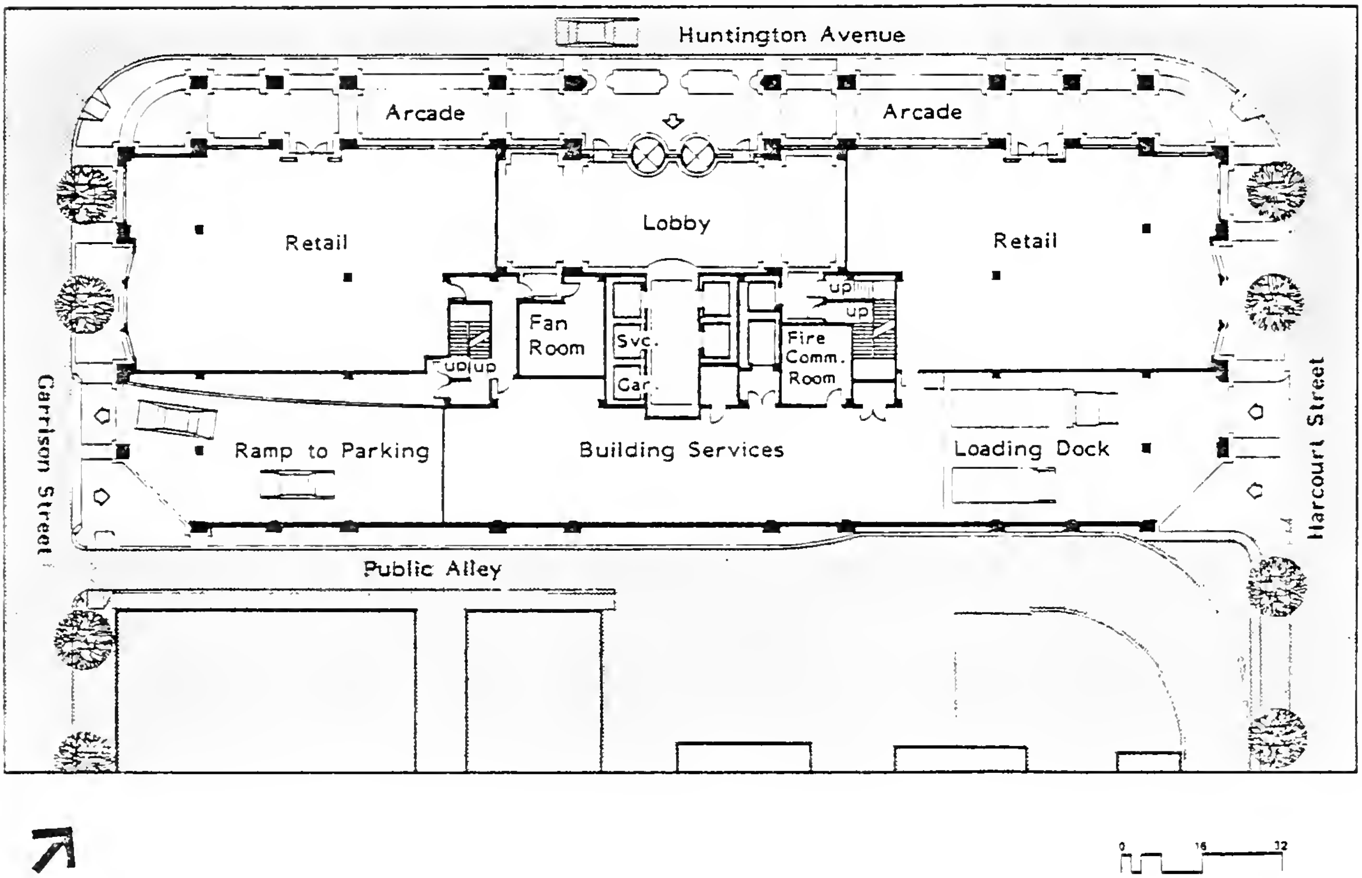
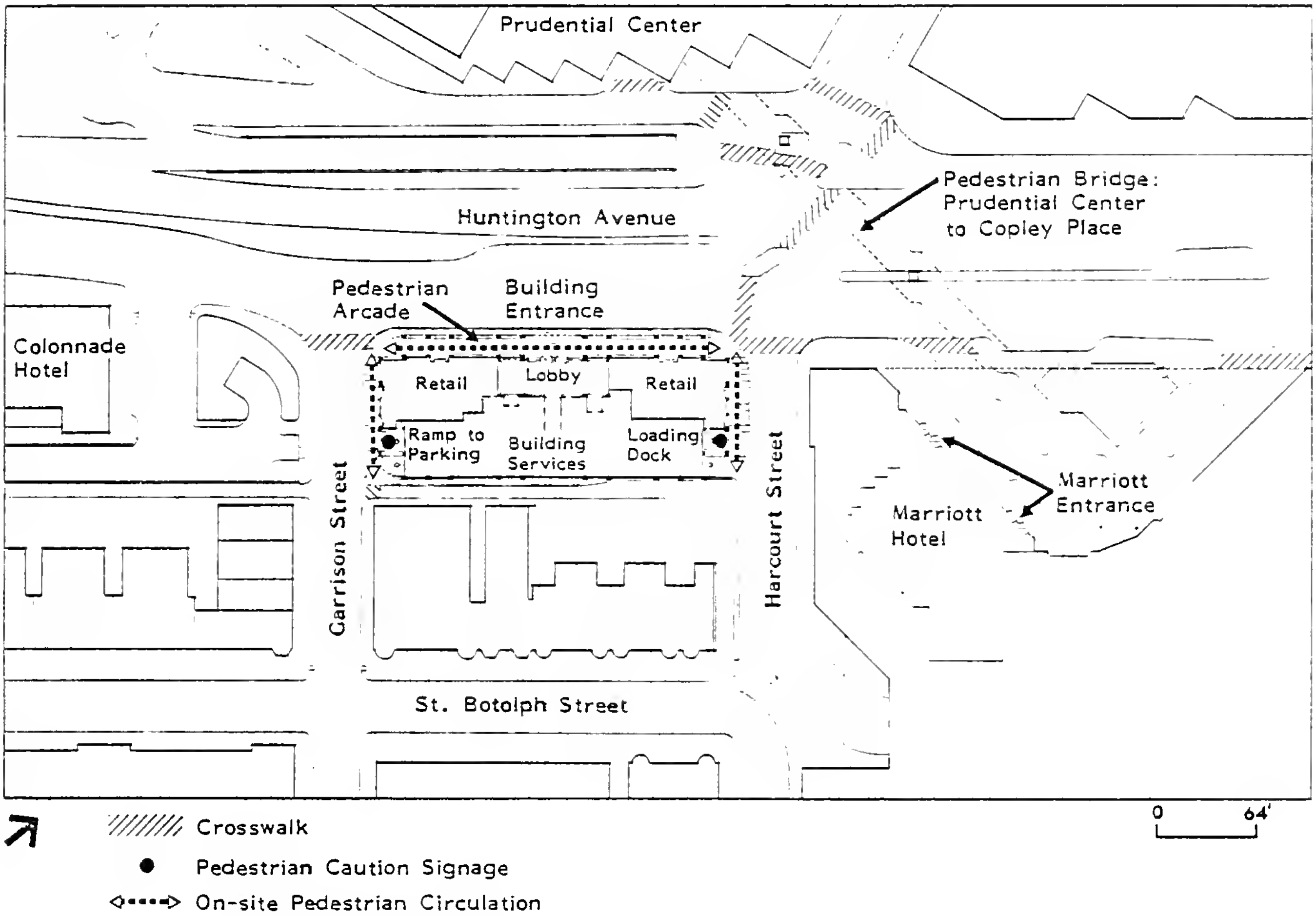


EXHIBIT III-3
Pedestrian Circulation Plan



The Low-Build Alternative is a 12-story building that rises 152 feet to the top of the highest habitable floor, and includes approximately 216,000 gross s.f. above grade of office and retail space. The Low-Build Alternative has not been fully designed. However, for purposes of comparison with the Proposed Project, a conceptual sense of massing and facade treatment has been developed. Due to the reduced height of this alternative, its massing is organized somewhat differently than that of the 116 Huntington Avenue Project. This alternative also contains a street-level arcade along Huntington Avenue and below-grade parking. This proposal has a simplified brick and pre-cast concrete exterior, a projecting cornice at mid-level, and setbacks at the upper levels (see Exhibit III-4). Garage and truck service access is the same as for the Proposed Project.

The approximate distribution of uses in this alternative is as follows:

o Office Area	210,000 gross s.f. (Includes Lobby)
o Retail Area	6,000 gross s.f.
o Parking	undetermined

Since there are a number of methods for calculating gross square footage, the gross square footage figures used here may differ somewhat from gross floor area as calculated pursuant to the Boston Zoning Code.

EXHIBIT III-4
Project View: 116 Huntington Avenue

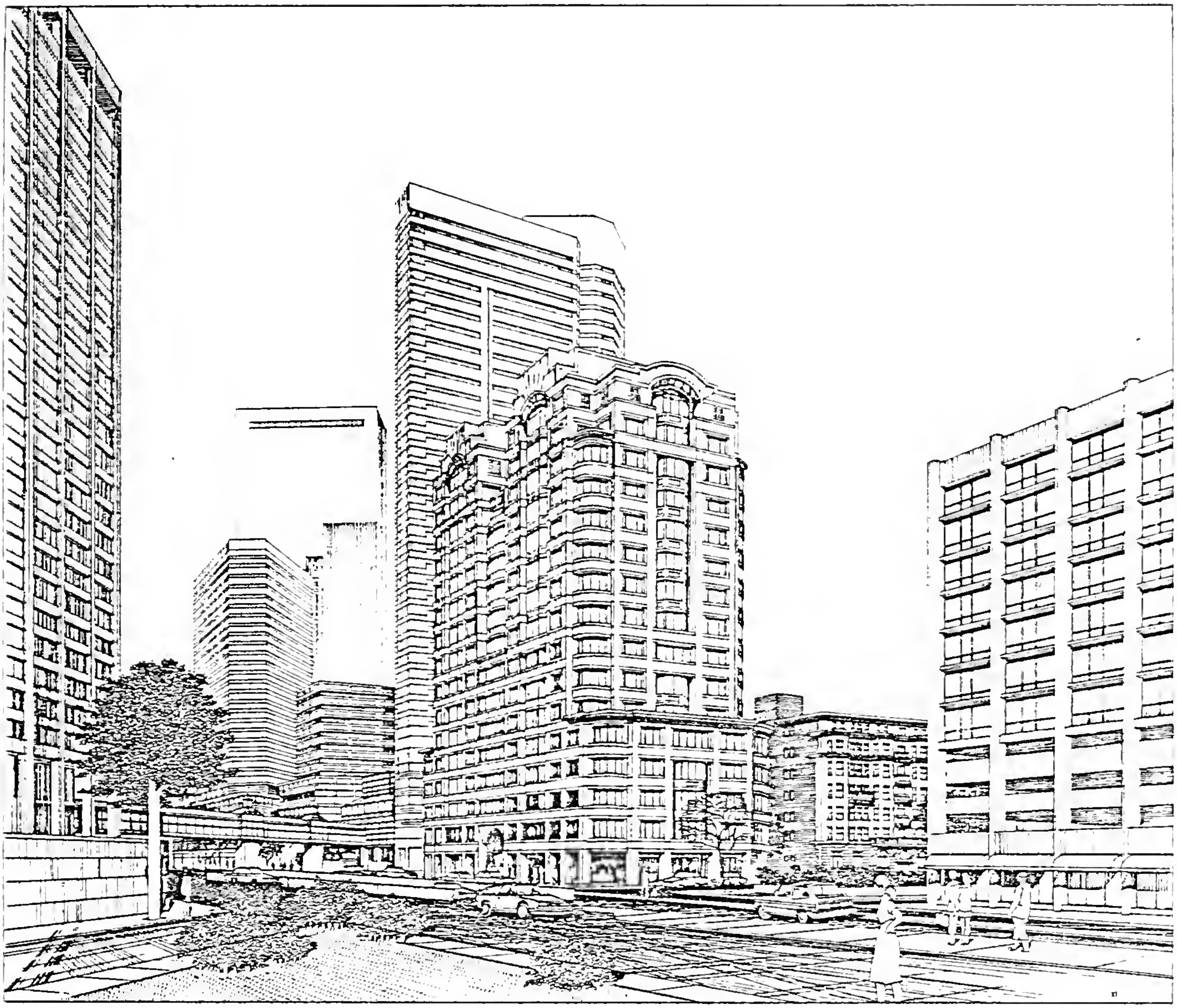
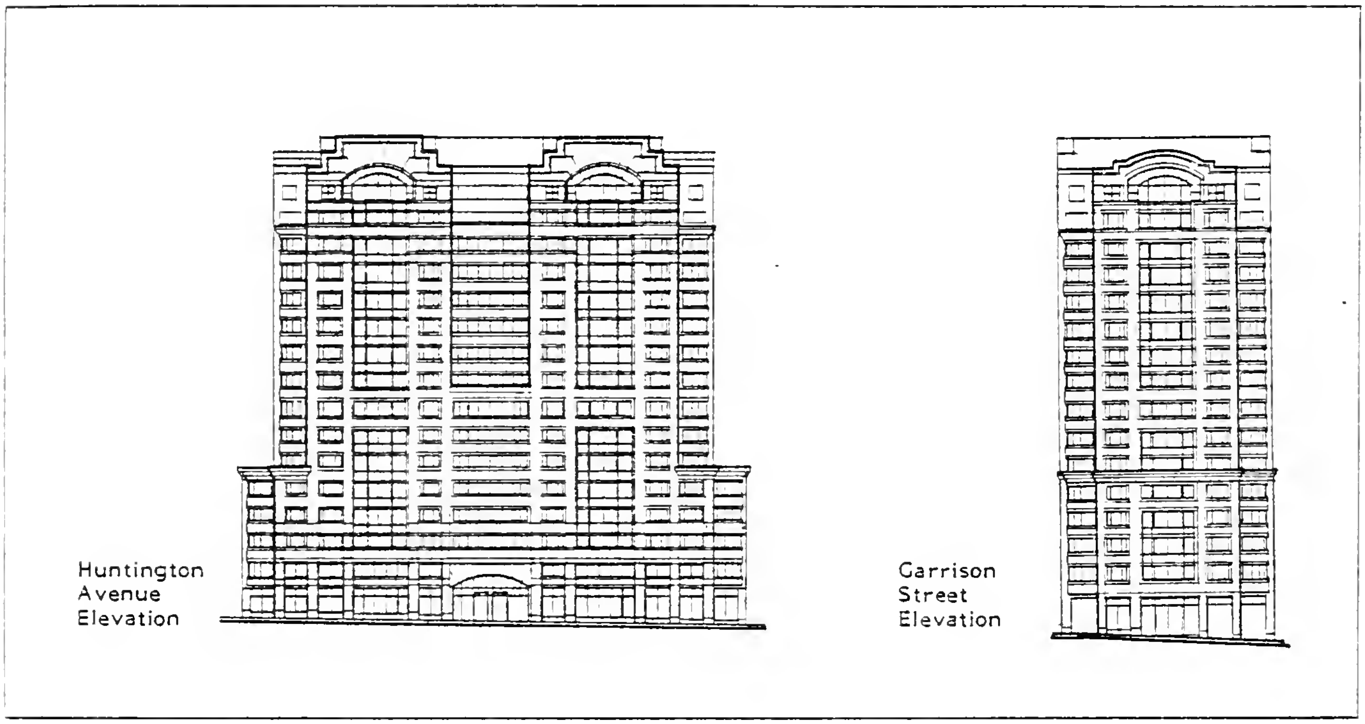
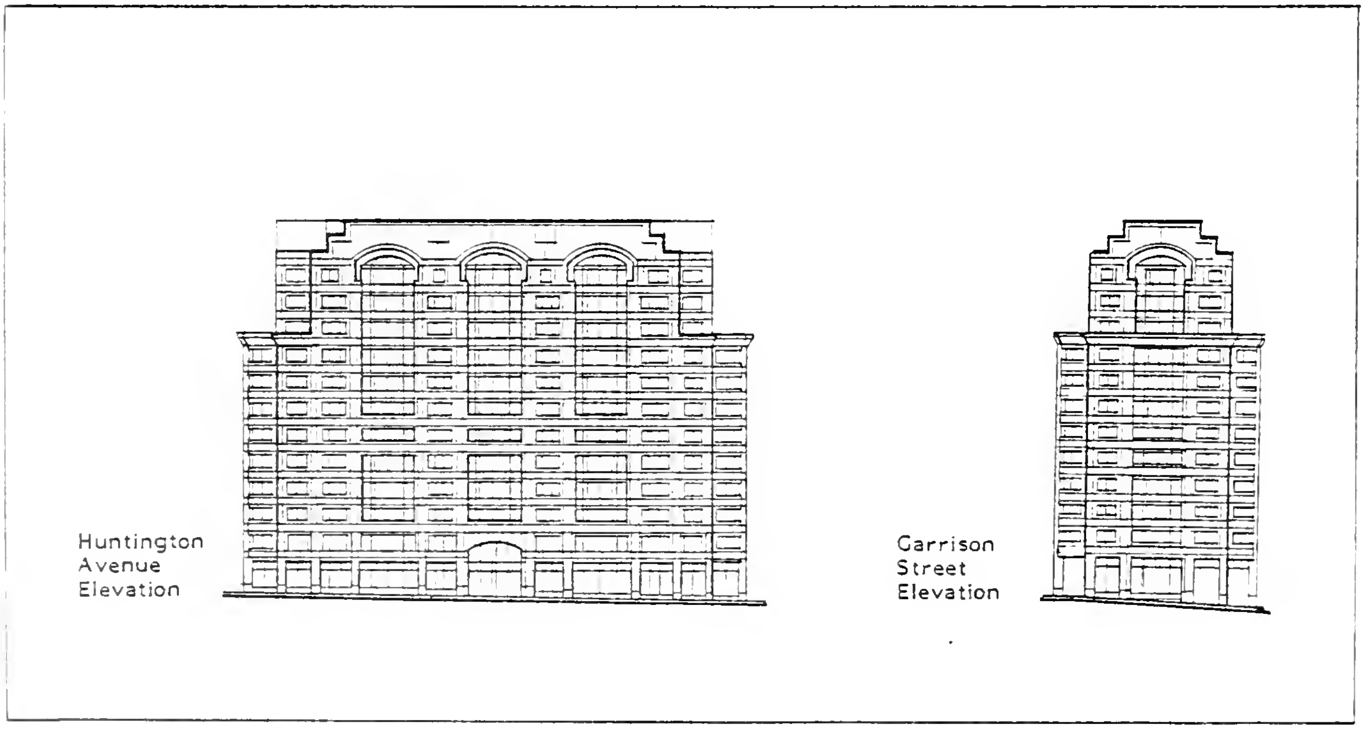


EXHIBIT III-5
Development Alternatives



Proposed Project



Low Build Alternative

INTRODUCTION

In response to the Secretary of Environmental Affairs' Certificate on the Draft EIR for 116 Huntington Avenue, the following environmental issues are discussed in this chapter:

A. Transportation

B. Visual Quality

C. Geology and Groundwater

These sections also address a variety of questions and comments received from other public agencies and interested parties. Although such comments are formally responded to in Chapter V -- Comments and Responses, this chapter includes a range of information which is directly referenced in Chapter V.

INTRODUCTION

The purpose of this section of the EIR is: to describe the use of existing transportation facilities serving the Huntington Avenue/St. Botolph Street area; to assess the affects of the 116 Huntington Avenue Project on existing and future transportation systems in 1989 and to examine measures to mitigate adverse impacts. Also included are responses to the comments presented in the Secretary of Environmental Affairs Certificate on the Draft EIR and comments raised by other interested parties. Additional descriptions, data and computations are presented in the Traffic Appendix.

STUDY METHODOLOGY

The transportation study was conducted in three distinct steps. Step I involved an inventory of existing travel demand characteristics in the area. The inventory included researching previous transportation reports for available data as well as conducting new observations of area travel demands. Observations of traffic volumes were conducted in October, 1986, at six locations during the morning and evening peak hours. These included the intersections of St. Botolph Street with Harcourt Street, Garrison Street, and West Newton Street, and the intersections of Huntington Avenue with Massachusetts Avenue, Garrison Street, and Harcourt Street. These locations were chosen based on input received from the City of Boston Transportation Department in their review of the Environmental Notification Form (ENF) and from the St. Botolph Street Neighborhood Association.

Step II of the study built upon the data base in Step I and established the framework for evaluating the transportation impacts of the Proposed Project. In this second step, travel demand forecasts for the Project were assessed along with forecasted demands created by other future area developments. Estimates were made for all transportation modes; however, emphasis was placed on vehicular traffic and parking demands. As required by MEPA, specific attention was paid to intersections estimated to carry 20 percent or more of site generated traffic.

The third step focused on the identification of mitigation measures that would help alleviate the identified deficiencies and improve traffic operations in the study

area. A series of specific measures are identified including demand reduction strategies and building management commitments, as well as transportation system management (TSM) type improvements.

Subsequent to the Draft EIR, additional traffic data was collected in the St. Botolph Street neighborhood. This effort included travel time studies and mechanical recorder counts along St. Botolph Street during February, 1987. This information was utilized in the analysis of impacts and mitigation measures in the St. Botolph Street neighborhood.

THE 116 HUNTINGTON AVENUE PROJECT

This analysis was conducted for a development consisting of approximately 270,000 gross s.f. of office space with 6,000 s.f. of ground floor retail space.[1] Three levels of underground parking (94 spaces) will be provided, an increase of 46 spaces over the existing supply, as the site is currently a private 48-space surface parking lot. Access to the parking facility is currently proposed via an entrance driveway on Garrison Street. Truck loading and deliveries will be restricted to Harcourt Street, on the eastern side of the proposed building. Also, included within this chapter is an analysis of an alternate configuration with parking access also located on Harcourt Street.

STUDY AREA

As specified in the Secretary of Environmental Affairs Certificate on the Environmental Notification Form, the transportation analysis encompasses a relatively large area of the Back Bay and South End as shown in Exhibit IV A-1. The transportation study area boundaries

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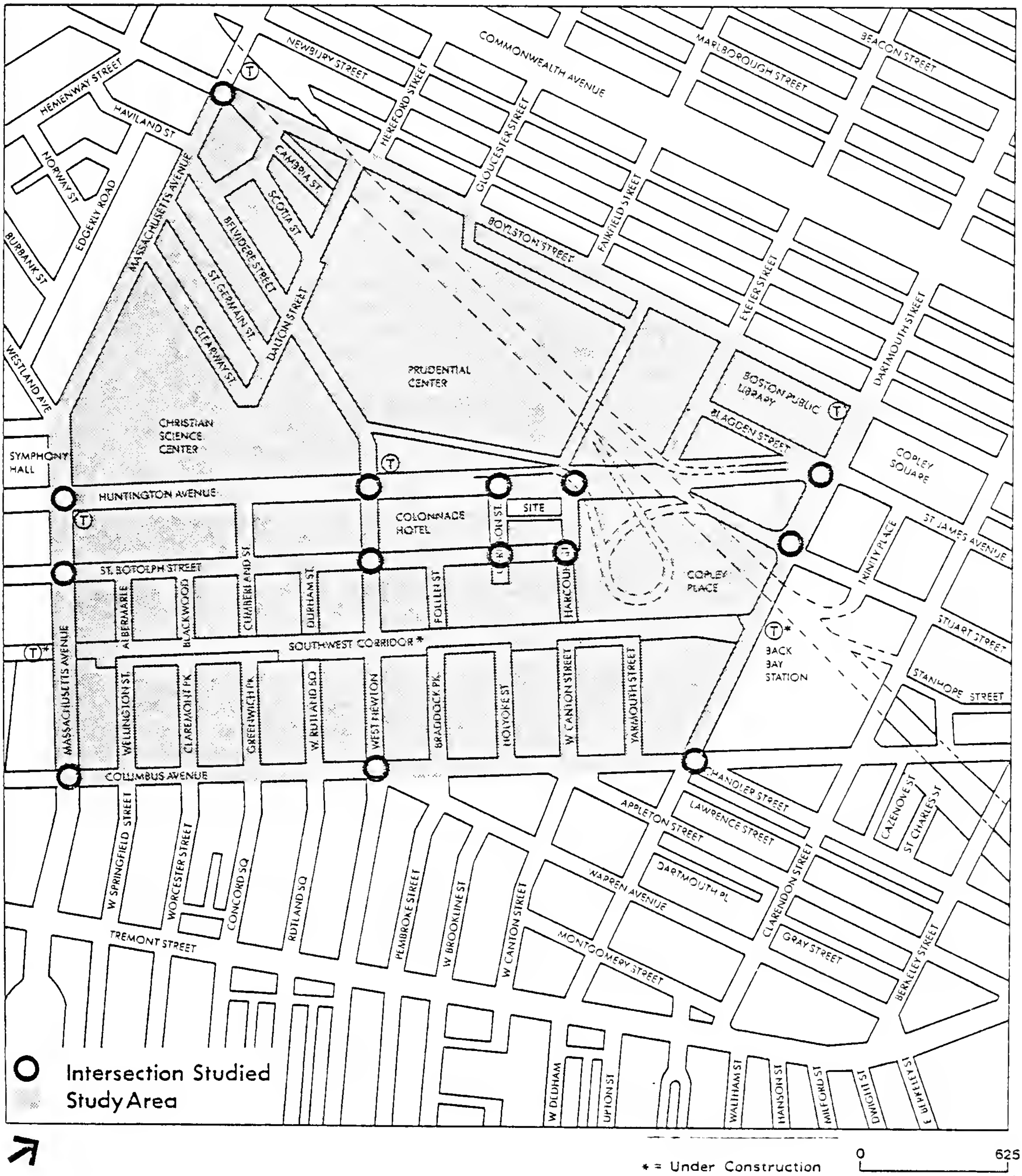
1 Design refinements since the initiation of the transportation analysis resulted in a 2,000 s.f. (approximately 0.7 percent) increase in the building program, for a total of 278,000 s.f.

EXHIBIT IV A-1
Study Area



include Dartmouth Street on the east, Massachusetts Avenue on the west, Boylston Street on the north, and Columbus Avenue on the south. A total of 13 intersections were analyzed with respect to traffic operations comprising 10 signalized and three unsignalized intersections. Also within the study area are one westbound on-ramp and two eastbound off-ramps to and from the Massachusetts Turnpike Extension (I-90).

Land use within the study area is a mix of office, hotel, retail, institutional and residential properties, and public open space. The commercial office market is dominated by service industries such as insurance, advertising, and consulting firms. Many of the hotels in the study area serve Hynes Auditorium which, when renovated, will comprise a national convention center. The northern half of the transportation study area is primarily commercial in nature, and it includes two major developments, Copley Place and the Prudential Center. The southern half of the area is primarily residential in character comprising the St. Botolph and other South End neighborhoods. Also included in the study area is the headquarters of the Christian Science Church and the Southwest Corridor transportation project, both with considerable public open space.

DESCRIPTION OF THE ENVIRONMENT

The transportation system in the vicinity of the study area is highly developed, consisting of regional highways, a grid arterial street system, several local and commuter bus routes, light and heavy rail transit service, and commuter/intercity rail service. The following sections describe the major transportation facilities in the study area.

STREET SYSTEM

Access/Circulation

The street system in the Back Bay and South End consists of both local and arterial streets and limited access highways. Regional routes serving the area include:

- The Massachusetts Turnpike Extension (I-90) linking the Back Bay to the western suburbs, with exits at

Prudential Center and Copley Place and an entrance just west of the intersection of Huntington Avenue and Dartmouth Street;

- Storrow Drive connecting with the local street system at several points and providing regional service to the west, north, and east;

- The Southeast Expressway connecting with Massachusetts Avenue, East Berkeley Street, and Kneeland/ Stuart Streets and providing a link to the South Shore;

- Huntington Avenue (Route 9) providing direct access to the west and southwest;

- Massachusetts Avenue providing access to the southeast and northwest; and

- Columbus Avenue (Route 28) providing access to the south and southwest.

The local streets north of the development site comprise a local collector-distributor system primarily associated with the Prudential Center. The major east-west roadways are Boylston Street and Huntington Avenue. Major north-south roadways include Dartmouth, Exeter, West Newton and Dalton Streets, along with Massachusetts Avenue to the west. South of the site are a series of discontinuous north/south streets running between Huntington Avenue and the Southwest Corridor Similarly, there are a series of north/south dead-end residential streets between Columbus Avenue and the Southwest Corridor. Of all these local streets, only West Newton Street provides vehicular access across the Southwest Corridor.

Exhibit IV A-2 shows the area circulation system in the study area.

Existing Traffic Volumes

Traffic volume data were compiled from four reports previously prepared for the Back Bay/South End study area including the 1985 Back Bay Traffic Study, the 1985 Tent City Final Environmental Impact Report (FEIR), the 1984 Hynes Auditorium Expansion FEIR, and the 1983 500 Boylston Street Draft and Final EIRs. New morning

EXHIBIT IV A-2
Area Circulation System

* = Under Construction

0 625

and evening peak period traffic volume data were collected at the intersections of Garrison Street/St. Botolph Street, Harcourt Street/St. Botolph Street, Garrison Street/ Huntington Avenue, and Harcourt Street/Huntington Avenue. Morning peak period counts were conducted at the intersections of Huntington Avenue/Massachusetts Avenue and West Newton Street/St. Botolph Street. These counts were conducted in response to a request by the City of Boston Transportation Department or, in the case of the Massachusetts Avenue intersections with Huntington Avenue and Columbus Avenue, to update traffic volume data at major study area intersections.

Existing AM peak hour (7:45-8:45 AM) and PM peak hour (5:00-6:00 PM) traffic volumes are illustrated in Exhibits IV A-3 and IV A-4, respectively. Peak hour traffic on selected roadways in close proximity to the proposed site is summarized in Table IV A-1. As indicated by this table, of the major roadways in the study area, Massachusetts Avenue carries the highest volume of peak hour traffic (2,396 vehicles in the morning peak) followed by Huntington Avenue (1,660 vehicles in the morning peak) and Columbus Avenue (1,081 vehicles in the morning peak). Of the two minor roadways adjacent to the site, Garrison Street carries 258 vehicles in the morning peak hour and 130 vehicles in the evening peak, while Harcourt Street carries 57 and 35 vehicles in the morning and evening peak hours, respectively.

This analysis focused on peak hour characteristics of parking and traffic operations in the study area. Conditions during the morning and evening peak periods are considered to represent the most congested conditions throughout the day. Daily volume information on the various streets in the study area was not collected. It should be noted, however, that estimates of daily trip making activity by the Project are included in the analysis.

PARKING

A large supply of public and private off-street parking is provided in the study area. Most of this supply is associated with larger developments such as Prudential

EXHIBIT IV A-3
Existing AM Peak Hour Traffic Volumes

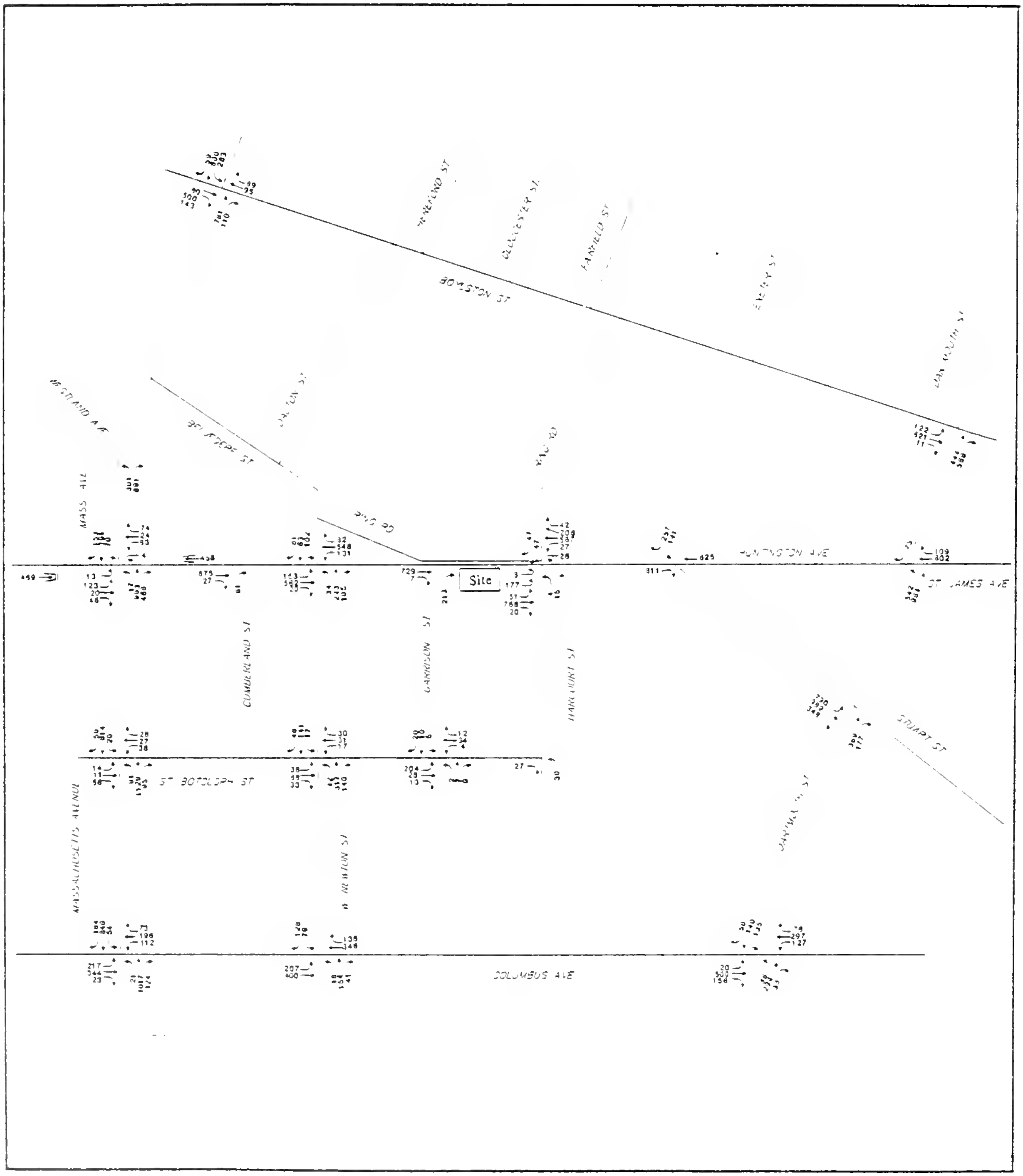
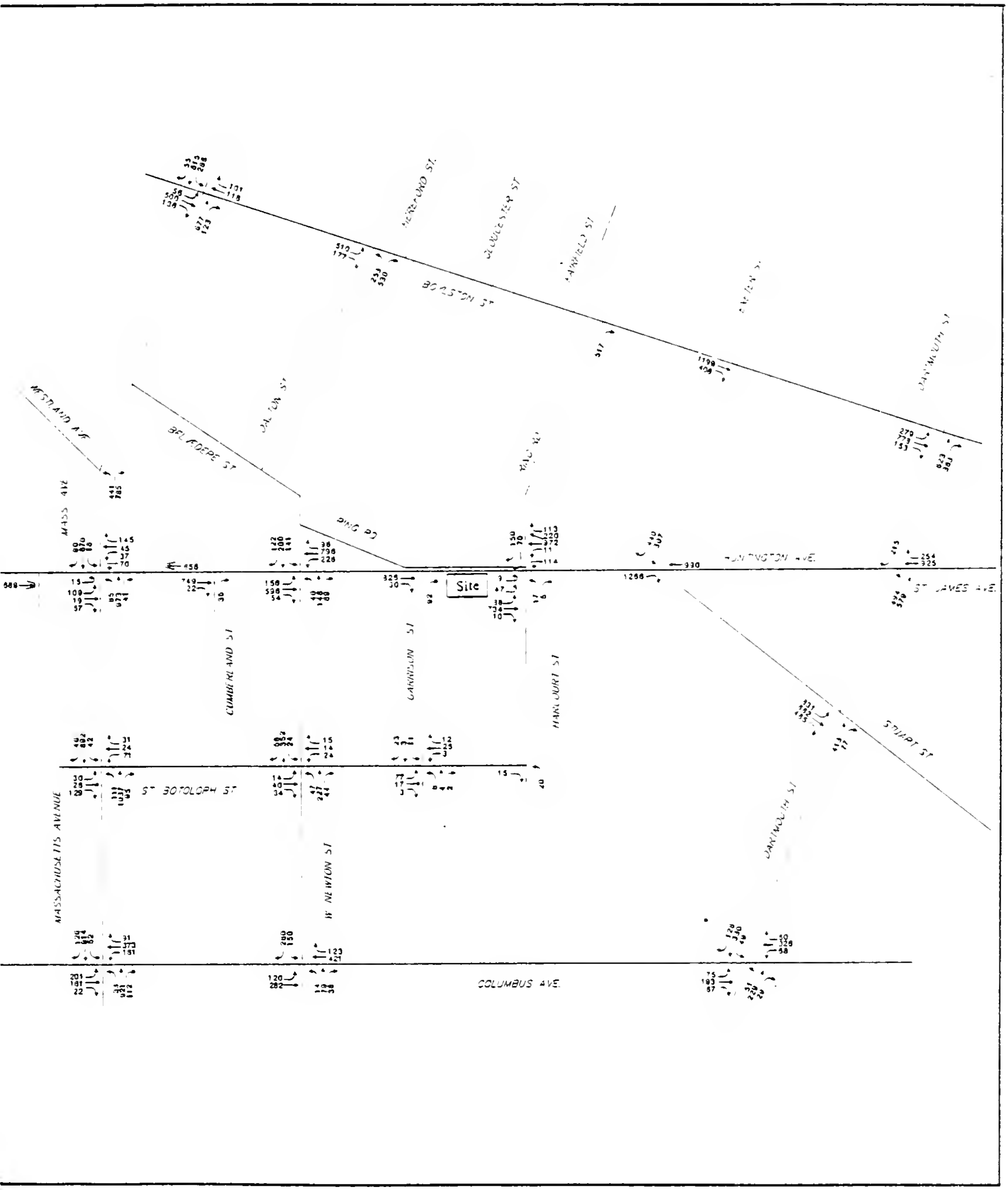


EXHIBIT IV A-4
Existing PM Peak Hour Traffic Volumes



Center and Copley Place. A limited supply of curbside metered and residential parking is also available as described below.

TABLE IV A-1
Peak Hour Roadway Traffic Volume Summary

Street	AM	PM
Huntington Avenue at Harcourt Street		
-- Eastbound	1,022	888
-- Westbound	638	1,042
West Newton Street south of Huntington Avenue		
-- Northbound	382	256
-- Southbound	214	434
Garrison Street south of Huntington Avenue		
-- Northbound	223	93
-- Southbound	35	37
Harcourt Street south of St. Botolph Street		
-- Northbound	30	20
-- Southbound	27	15
St. Botolph Street west of Garrison Street		
-- Eastbound	242	97
-- Westbound	56	57
Massachusetts Avenue south of Huntington Avenue		
-- Northbound	1,476	1,099
-- Southbound	920	964
Columbus Avenue west of West Newton Street		
-- Eastbound	607	402
-- Westbound	474	695

Off-Street Parking

Existing Supply

Table IV A-2 describes the major off-street parking facilities in the study area and their number of spaces. There are currently 6,670 off-street parking spaces in these facilities comprising 3,587 publicly available spaces and 3,083 private spaces. In addition, there are several very small residential parking lots in the area. As indicated in this table, the bulk of these spaces are housed in the Prudential Center Complex garages (3,426 spaces) and at Copley Place (860 spaces). These facilities, the Cheri garage and the Westin and Colonnade Hotels provide the bulk of the available public spaces. The remaining private spaces are not available for use by the general public but are restricted to private uses associated with each development.

Based on information gathered from the garage operators at the Prudential Center and Copley Place, on a typical day in the study area, after monthly parkers and commuters have arrived at work, there are approximately 200 public spaces available in the Prudential Center garage and approximately 200 public spaces available in the Copley Place garage. These spaces are typically available for short-term parkers but can also be used for daily parking at the hourly rate.

The Back Bay/South End is one of the few areas in the City where additional parking spaces are under construction. As indicated in the Draft EIR, a total of 698 spaces are being constructed as part of the Tent City development. The Draft EIR indicated that 498 spaces are already committed; 369 spaces are allocated to office tenants of Copley Place with 129 spaces allocated to residents of the Tent City housing units. This leaves 200 public parking spaces which can be used for short-term users.

On-Street Parking

Short-term curbside parking is provided at 83 metered spaces along Huntington Avenue, Garrison Street, Harcourt Street, Cumberland Street, West Newton Street and portions of St. Botolph Streets. The remaining curbside spaces are for South End resident permit holders only. Both the off-street and curbside metered parking supply is illustrated in Exhibit IV A-5.

TABLE IV A-2
Major Off-Street Parking Supply

Facility	Location	Public Spaces	Private Spaces	Total
Cheri Garage[1]	Dalton & Scotia Streets	501	0	501
Back Bay Hilton[1]	Dalton & Belvidere Streets	265	0	265
Prudential Center	Boylston/Exeter/Huntington	1,626	1,800	3,426
Christian Science Center[1]	Huntington at Massachusetts	0	550	550
Midtown Motel	Huntington at Cumberland	0	145	145
Colonnade Hotel	Huntington & West Newton	275	0	275
Site Lot	Huntington & Garrison	0	48	48
Copley Place	Huntington & Dartmouth	860	0	860
Marriott Hotel	Huntington & Harcourt	0	265	265
Westin Hotel	Huntington & Dartmouth	0	275	275
Blagden Street	Huntington & Blagden	60	0	60
Total		3,587	3,083	6,670

1 These facilities are greater than 1,000 feet from the site.

Note: Tent City parking (698 spaces) currently under construction.

Source: Hynes Auditorium Parking Study, Final Report, June, 1985 and follw-up discussions with Prudential Center garage management.

EXHIBIT IV A-5
Existing Parking Facilities

* = Under Construction

0 625

In front of the site of the proposed 116 Huntington Avenue Development, three metered spaces are provided with the curbside area designated as a taxi stand. Taxis queue in this area to serve the Marriott Hotel. However, due to a limited storage area immediately adjacent to the Marriott and at the site of the proposed development, taxicabs are often parked illegally and/or double parked on Huntington Avenue. Occasionally, taxis also line up on Harcourt Street.

PUBLIC TRANSPORTATION SYSTEM

The Proposed Project is well served by public transportation including the Green Line and Orange Line subways, commuter rail and bus service.

The MBTA Green Line routes B, C, D, and E provide light rail service between the study area and the inner west and southwest suburbs and North Station. Public transportation in this area is also well developed and utilized. The MBTA Green Line routes B, C, and D run under Boylston Street with stations at Copley Square and Massachusetts Avenue. At Copley Station, the Green Line branches to form the Huntington Avenue branch of the Green Line (Route E) which has stations at Prudential Center and Symphony Hall. Back Bay Station, located on Dartmouth Street on the eastern side of the study area, currently accommodates commuter rail service between Downtown Boston and the western suburbs.

The Orange Line, which currently operates along Washington Street in the South End, when relocated to the Southwest Corridor and opened in 1987, will provide an improved transit connection between the study area and the northeast and southwest inner suburbs. The Southwest Corridor alignment is situated between and runs directly parallel to St. Botolph Street and Columbus Avenue.

Commuter rail service, with a stop at Back Bay Station on Dartmouth Street, serves the Framingham Branch and, when Southwest Corridor construction is completed, will serve the Stoughton, Franklin, Needham and Attleboro Branches as well. It will also serve as an Amtrak station.

Bus service to the area is good with six routes serving Copley Square, two blocks west of the Project site. One local MBTA route (#68) passes in front of the site. Headways on the bus lines vary from 8 to 25 minutes depending on the time of day. In addition, MBTA express routes 302 (Watertown), 310 (Needham), and 315 (Roslindale Square), and local bus route 68 (Boston City Hospital) terminate at Copley Square approximately two blocks east of the Project site. These stations are illustrated in Exhibit IV A-6.

PEDESTRIANS

Pedestrian connections between residential buildings and major developments in the study area are provided at major intersections. A review of pedestrian crossings immediately adjacent to the site indicated that there are some existing deficiencies. For example, at the Huntington Avenue intersections with West Newton Street and Harcourt Street, the pedestrian signal actuation buttons do not operate properly. This deficiency is addressed in the mitigation section of this chapter.

PROBABLE PROJECT IMPACTS

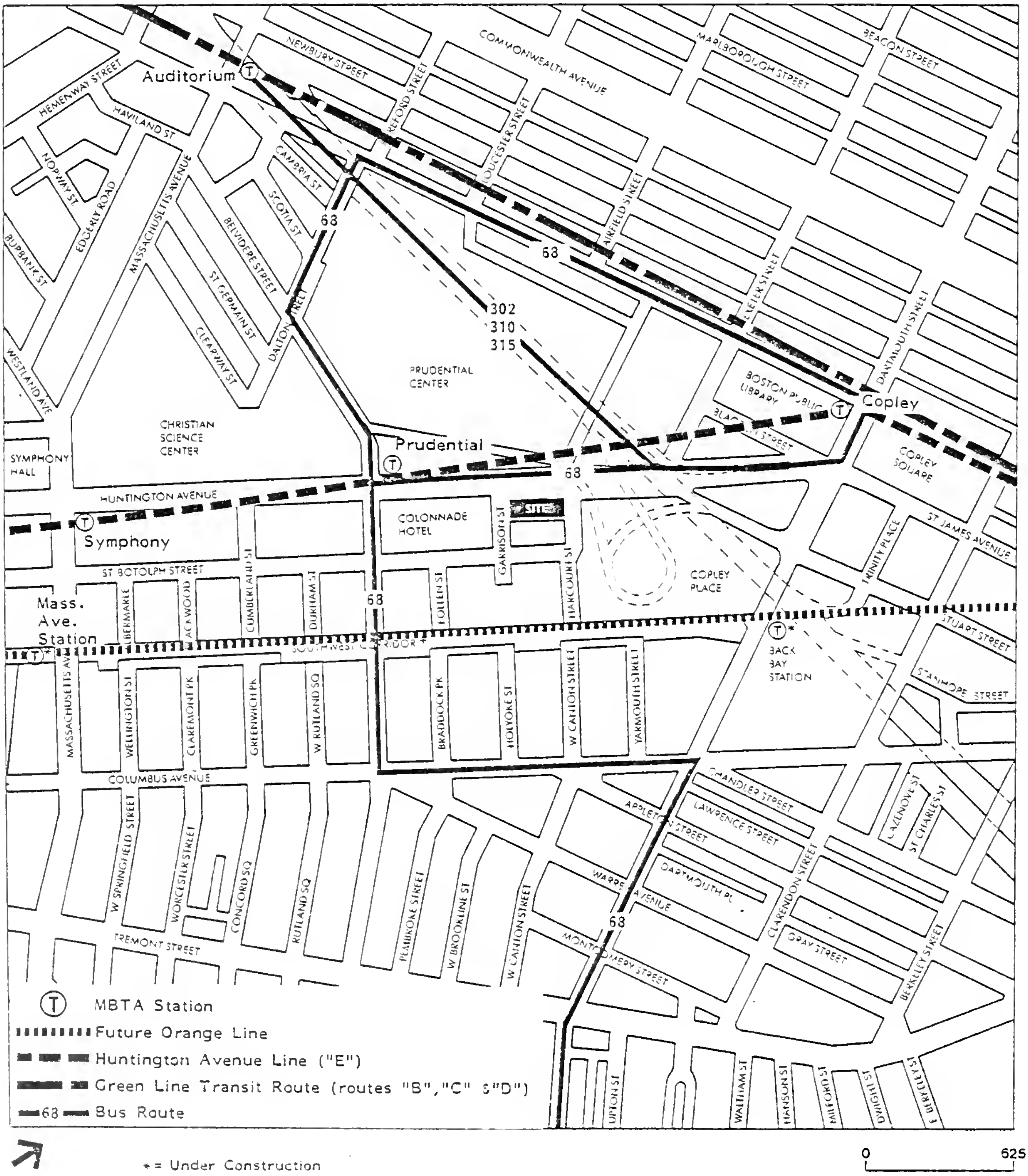
This section describes the expected transportation impacts of the Project on the surrounding study area and compares the results to the No-Build condition to determine incremental impacts. To estimate the impact of the Proposed Project on the transportation system in the Back Bay, several sources of information were used. The Copley Place EIR,[1] the 500 Boylston Street EIR[2], and the 1983 City of Boston Parking Study[3] provided trip

1 Copley Place Draft Environmental Impact Report Supplement/Draft Environmental Impact Statement, February 1980.

2 500 Boylston Street Project BRA Draft Environmental Impact Report, October 1984.

3 "Parking in Central Boston: Meeting the Access Needs of a Growing Downtown," prepared for the Boston Transportation Department, December, 1983.

EXHIBIT IV A-6
Public Transportation Routes



generation rates. Detailed transportation and energy surveys of over 3,000 employees of John Hancock Insurance Company and the New England Life Insurance Company provided actual mode split and vehicle occupancy data for area employees. In accordance with the MEPA Scope, this effort focused on estimating traffic demands for the Proposed Project and did not consider the Lower Build alternative, which would generate a reduced transportation impact and was evaluated only from an urban design perspective.

TRAVEL DEMANDS

Trip Generation

To assess the impact of the Project on the transportation system in the Back Bay, separate travel demand estimates by type of use and user were made.

Tables IV A-3, IV A-4 and IV A-5, respectively, summarize person-trip rates, mode split percentages and vehicle occupancy rates used in the analysis. Table IV A-3 represents total person-trip rates for entering and exiting activity per 1,000 s.f. of building area over the course of the day, independent of mode of arrival.

TABLE IV A-3
Person-Trip Generation Rates

		Daily Person-Trips per 1,000 Square Feet		
Use	User	In	Out	Total
Office	Work	4.4	4.4	8.8
	Non-work	2.5	2.5	5.0
	Total	6.9	6.9	13.8
Retail	Work	2.7	2.7	5.4
	Non-work	15.6	15.6	31.2
	Total	18.3	18.3	36.6

Source: Copley Place EIS (1980) and John Hancock and New England Life Employee Survey (1983).

The work trip rates reflect expected employment density in the Proposed Project and are typically employee arrival and departure trips. Non-work trips are trips made to and from the Project for all other purposes (i.e., shopping, outside business, lunch, etc.).

Table IV A-4 summarizes the arrival mode characteristics assumed for the Project. These percentages were derived from actual survey data of nearly 3,000 employees of John Hancock and New England Life in the case of office work trips. For the other trip types, mode split percentages were taken from the Copley Place EIS. The mode split characteristics from Table IV A-4 were applied to the total trip estimates to determine trips by transportation mode. It should be noted that the percentage of trips made by automobile is a conservative estimate. As discussed later in this chapter, the high cost and limited availability of long-term parking will likely result in a higher transit utilization than is assumed in the following analysis.

TABLE IV A-4
Mode Split
Percentages

		Percent Trips By		
Use	User	All Vehicles	All Transit	Walk
Office	Work	37	56	7
	Non-work	45	40	15
Retail	Work	30	60	10
	Non-work	40	20	40

Source: Copley Place EIS (1980) John Hancock and New England Life Survey (1983).

Table IV A-5 summarizes anticipated vehicle occupancy rates (VOR) for those trips arriving by auto. Again, the primary data source was the survey of area employees. The average occupancy for office work trips is 1.9 persons per vehicle while the non-work trip VOR is 1.5 persons per vehicle.

TABLE IV A-5
Vehicle
Occupancy

Trip Type	Use Office	Use Retail
Work	1.9	1.4
Non-work	1.5	1.9

PROJECT TRAVEL DEMANDS

Daily Person-Trips

These daily person-trip rates were applied to the proposed 270,000 s.f. of office and a 6,000 s.f. ground floor retail space for the Huntington Avenue development parcel.[1] Table IV A-6 summarizes the total net daily person-trip estimate for the Project. As can be seen, a total of 3,950 person-trips will be generated over the course of the day, representing 1,975 person-trips entering and 1,975 person-trips exiting.

TABLE IV A-6
Estimated
1989 Daily
Person-Trips
(Total To
and From
Site)

Use	Trip Type	Number of Trips
Office	Work	2,375
	Non-work	1,350
Retail	Work	35
	Non-work	190
Total		3,950

1 Design refinements since the initiation of the transportation analysis resulted in a 2,000 s.f. (approximately 0.7 percent) increase in the building program, for a total of 273,000 s.f.

Mode of Arrival

Table IV A-7 summarizes the mode of arrival of the projected daily trips. Multiplying the trip estimate in Table IV A-6 by the mode split factors in Table IV A-4 produces the figures presented in Table IV A-7. An estimated 60 percent of the trips to the Project site will be by a mode other than automobile. Only 40 percent of the person-trips to the site are expected by personal auto, carpool, vanpool or taxi, while 49 percent of all trips are expected by public transportation. The remaining 11 percent are expected to be walk trips. The results and the analysis presented in the following discussion discuss the impacts of a reduced auto share of the mode split, based on the limited amount of parking expected to be provided. It has been assumed that the mode split percentages will not change between now and 1989 for two reasons: (i) it is consistent with the assumption made in the 1983 City of Boston Parking Study, and (ii) it represents a "worst-case" traffic analysis since it implies that sufficient parking is provided at the Project site to accommodate this demand estimate. A parking analysis to address this issue is provided later in this chapter.

TABLE IV A-7
Estimated 1989 Daily Person-Trips by Mode (Total To and From Site)

Use	Trip Type	All Vehicle	All Transit	Walk	Total
Office	Work	380	1,330	165	2,375
	Non-work	605	540	205	1,350
Retail	Work	10	20	5	35
	Non-work	75	40	75	190
Total		1,570	1,930	450	3,950
Percent (%)		40	49	11	100

It should be noted that surveys of employees in one insurance firm located in Copley Place were previously conducted for the Proponent. These indicated that a lower percentage (23 percent) of employees travel to work by automobile and park their cars than was assumed

in this analysis.[1] However, this information was from a relatively small sample of only one firm (204 respondents) and was not as extensive as the Back Bay survey previously discussed. The estimates used in this analysis are therefore felt to be a conservative representation of worst case project impacts.

Peak Hour Trips

Of greater concern than the total daily trips is the portion of those trips occurring during peak commuter hours, since it is these periods which are used to judge the performance of the transportation system. Table IV A-8 shows the arrival and departure pattern expected during different time periods, based on the Back Bay office survey. As shown in this table, 55 percent of the office trips to the Project in the morning will arrive and depart during the AM peak hours. Similarly, 55 percent of those office trips traveling from the Project in the afternoon would depart during the PM peak hour.

TABLE IV A-8
Percentages of Daily Trips During Peak Hours and Off-Peak Hours

Use and Direction	Work AM Peak	Work PM Peak	Work Off-Peak	Non-Work AM Peak	Non-Work PM Peak	Non-Work Off-Peak
Office						
Arrivals	55	0	2	10	0	15
Departures	0	55	2	0	20	15
Retail						
Arrivals	10	10	12	0	5	10
Departures	0	20	12	0	10	10

Source: Copley Place EIS (1980) and John Hancock and New England Life Employee Survey (1983).

Tables IV A-9 and IV A-10 present a summary of future trips of future trips anticipated during the morning and

1 Sasaki Associates, "Summary of Copley Place Employees Transportation Questionnaire," July 1, 1985 Memorandum for Tent City EIR.

periods, respectively. The estimates were derived by multiplying one-half of the daily person-trips (to reflect directional travel) by the appropriate factors in Table IV A-8. Approximately 723 person-trips in each modal category are expected to occur during the AM peak hour and about 820 person-trips are expected in the PM peak hour. It should be noted that reverse tripmaking for office work and non-work trips during the peak hours will occur to such a small extent that the impacts on peak hour traffic would be negligible.

TABLE IV A-9
1989 AM
Peak Hour
Person-Trips
by Mode

Use	Trip Type	All Vehicles	All Transit	Walk
Office	Work	243	366	46
	Non-work	30	27	10
Retail	Work	0	1	0
	Non-work	0	0	0
Total		273	394	56
Percent of Daily		17.4	20.4	12.4

TABLE IV A-10
1989 PM
Peak Hour
Person-Trips
by Mode

Use	Trip Type	All Vehicles	All Transit	Walk
Office	Work	241	366	46
	Non-work	76	54	20
Retail	Work	1	3	1
	Non-work	4	3	5
Total		322	426	72
Percent of Daily		20.5	22.1	16.0

Vehicle-Trips

By applying vehicle occupancy rates in Table IV A-5 to the daily and peak hour estimates of person-trips by

auto, the number of new vehicle trips expected to be generated to and from the Project site can be estimated. These estimates are shown in Table IV A-11. At full development, the Project is conservatively expected to generate an estimated 914 daily vehicle-trips, comprised of 457 entering and 457 exiting trips over the course of the day. One hundred forty-eight (148) and 172 peak hour vehicle-trips will be generated during the morning and evening peak hours, respectively.

TABLE IV A-11
1989
Vehicle-Trips Generated by the Project

Use	Trip Type	Daily	AM Peak	PM Peak
Office	Work	463	128	127
	Non-work	405	20	41
Retail	Work	7	0	1
	Non-work	39	0	3
Total		914	148	172

Adjustments to Trip Generation Rates

Several comments were received in response to the Draft EIR regarding the trip generation rates used for work trips to the office component of the Project. The data for mode of travel and automobile occupancy rates was derived from the Copley Place EIR and surveys of employees of the New England Life Insurance Company, as previously described. Similar rates were observed in the surveys conducted at office buildings in Back Bay and Downtown Boston for the City of Boston parking study during 1983. The range of mode split percentages are presented in Table IV A-12. As shown in this table, the percent of persons who travel to work by automobile ranged from a low of 26.7 percent in the Shawmut Bank building to a high of 44.3 percent at 470 Atlantic Avenue. Of the five buildings surveyed in the Boston Parking Study the average automobile mode share was 37.3 percent. The automobile rate assumed for this EIR was 37 percent.

Table IV A-12 also presents the average vehicle occupancy rates (VOR) for the five buildings surveyed. These ranged from a low of 1.67 persons per vehicle (ppv) at

the Shawmut Bank to a high of 2.04 at the Federal Reserve Bank. The average VOR observed in the City Parking Study was 1.87 ppv while the VOR used for the Draft EIR analysis of the 116 Huntington project was 1.9.

TABLE IV A-12
Comparative VOR and Mode Split Percentages For Office Workers

Building Surveyed	All Vehicles	All Transit	Walk	Vehicle Occupancy Rate
500 Boylston Street	35.0	51.4	13.6	1.90
470 Atlantic Avenue	44.3	53.1	2.6	2.02
125 High Street	42.9	54.0	3.1	1.72
Shawmut Bank	26.7	67.3	6.0	1.67
Federal Reserve Bank	38.0	57.0	5.0	2.04
Average	37.3	56.5	6.2	1.87

Source: "Parking in Central Boston: Meeting the Access Needs of a Growing Downtown," prepared for the Boston Transportation Department, December, 1983.

Comments on the Draft EIR expressed concern that a lower VOR, such as 1.6 ppv for office-based work trips, might be more appropriate for this project. In response, an analysis was conducted which tested the sensitivity of alternative VOR rates for the office work trip. The results of this analysis, which illustrates the net effect on total vehicle trips, are presented in Table IV A-13. As shown, by reducing the VOR to as low as 1.6 persons per vehicle, an additional 86 vehicle trips per day would be anticipated, with 23 additional vehicle trips in the AM peak hour and 22 additional vehicle trips in the PM peak hour. This change in peak hour travel amounts to approximately one trip every three minutes, a relatively small increment. As a result of the small change in vehicle trip generation using a lower VOR, it was considered unnecessary to recalculate the intersection analysis which was presented in the Draft EIR.

TABLE IV A-13
Sensitivity Analysis of Vehicle-Trips Generated By The Project

Office Work Trip VOR		Daily	AM Peak	PM Peak
1.9	Vehicle-Trips	914	148	172
1.8	Vehicle-Trips	939	154	177
	Increase	25	6	5
1.7	Vehicle-Trips	968	162	185
	Increase	54	14	13
1.6	Vehicle-Trips	1,000	171	194
	Increase	86	23	22

Background Traffic Growth

The Back Bay area of Boston continues to experience significant retail, office and residential development. In addition to the Proposed Project, there are several other major developments within the project area which are either substantially complete, under construction or in the planning stage. The impact of these projects on the transportation system must be considered an integral part of the analysis of the Huntington Avenue Project. Table IV A-14 summarizes the development proposals in the area by type and size of development which were included in the Development of the future 1989 No-Build traffic network.

Vehicle-trips were already generated for most of these projects as outlined in both the Tent City EIR and the 500 Boylston Street EIR. Three of the projects listed in Table IV A-14 are new projects identified after the Tent City EIR was filed and are large enough to impact peak hour traffic conditions. These are the Ingalls Building, the 360 Newbury Street renovation and the 739 Boylston Street renovation and expansion project. These were also added to the existing travel network to produce the 1989 No-Build travel conditions.

The comment was raisedon the Draft EIR that redevelopment of 420 Boylston Street should have been included on the list of area development activity. This building currently comprises 93,275 s.f. of space including

79,212 s.f. of vacant office space and 14,063 s.f. of retail space. The retail space on the ground floor remains occupied at present. The planned redevelopment of the building will result in a total of 113,730 s.f. of space, an increase of 20,455 s.f. Because most of the traffic count data for this EIR was collected when this building was fully occupied, the net effect of the 20,455 s.f. addition to this property on the No-Build traffic network will be minimal. Because of this fact and the distance from the 116 Huntington Avenue site (well beyond the bounds of the transportation study area), no new analysis was necessary.

TABLE IV A-14
Area Development Activity

Development	Type	Size
Hynes Auditorium Expansion	Convention Center	150,000 SF
500 Boylston Street Phase One	Office	640,000 SF
	Retail	65,000 SF
	Parking	1,270 Spaces
Ingalls Building 855 Boylston Street	Office	146,500 SF
	Retail	6,000 SF
739 Boylston Street	Office	110,000 SF
	Retail	10,000 SF
360 Newbury Street	Office	72,000 SF
	Retail	42,700 SF
Heritage on the Garden	Residential	90 DU[1]
	Retail	50,000 SF
	Office	129,700 SF
Tent City	Residential	270 DU
	Retail	7,500 SF
	Parking	698 SPACES
Prince School	Residential	35 DU

Notes:

1. DU = dwelling units.

Trip Distribution/Assignment

Generated vehicle-trips from the Proposed Project and other new developments were distributed over the available roadway system. This distribution was derived from regional information on travel patterns. Exhibit IV A-7 and Table IV A-15 illustrate the magnitude of the directional distribution.

TABLE IV A-15
Trip Distribution Summary

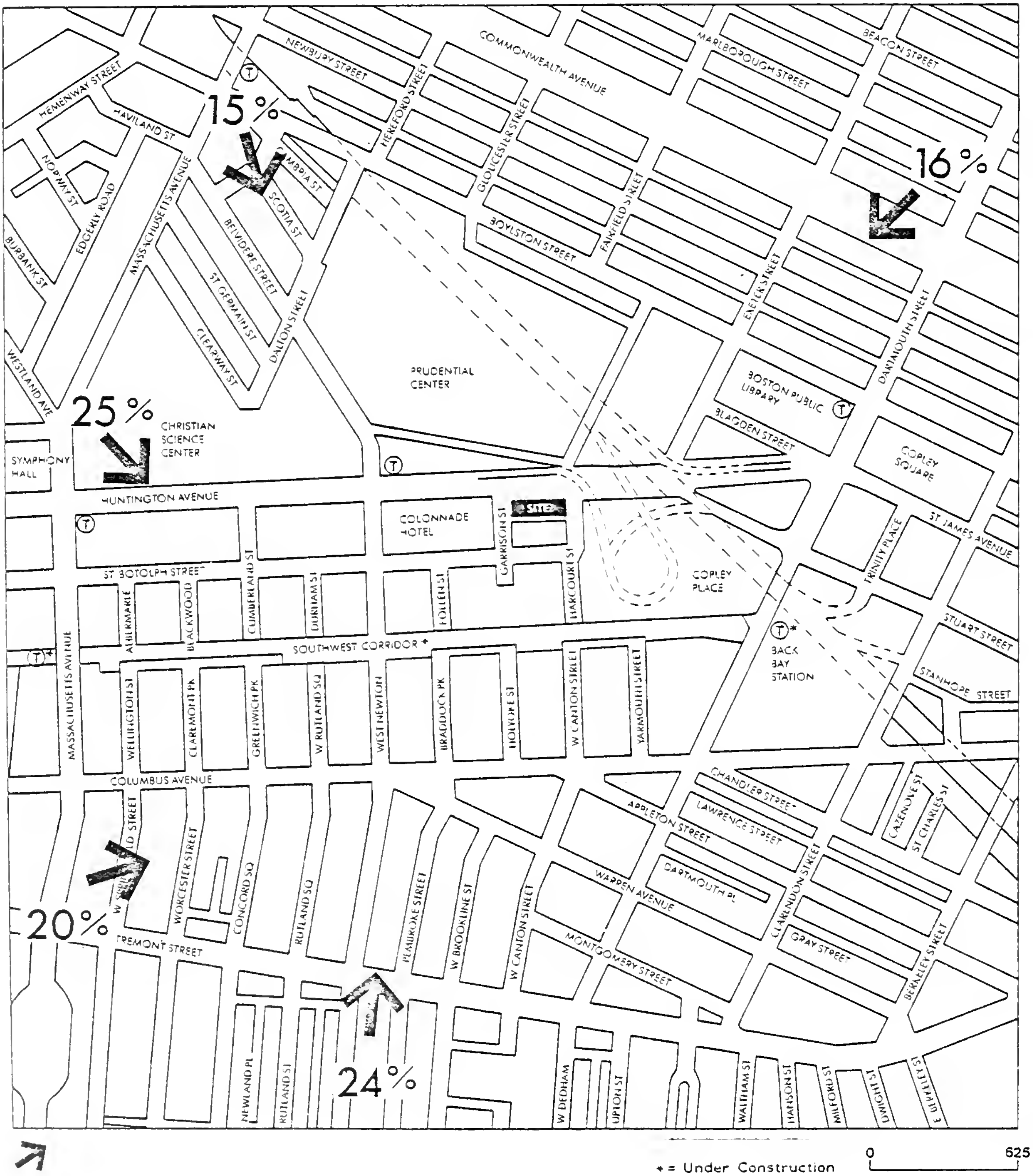
Regional Corridor	Percent	Sub Corridor	Percent
North, Northeast	16	Northeast	11
		North	11
North, Northwest	15	Northwest	9
West	25	West (Inner)	11
		West (Outer)	14
Southwest	20	Southwest (Inner)	16
		Southwest (Outer)	4
Southeast	24	Southeast	24
Total	100	Total	100

Notes:

1. From Copley Place EIS and 500 Boylston Street EIR.

As indicated on Table IV A-15, on a regional basis 16 percent of vehicle-trips will be made to the north and northeast, with 15 percent made to/from the north and northwest. Twenty-five percent of the vehicle-trips will be made to and from the west and 20 percent and 24 percent on the Project trips will be made to and from the southwest and southeast, respectively. These distribution patterns are further broken down as they would impact local roadways. For example, of the 25 percent of Project traffic to and from the west, 11 percent will use roadways such as Storrow Drive and Huntington Avenue while 14 percent will utilize the Massachusetts Turnpike (I-90).

EXHIBIT IV A-7
Trip Distribution Patterns



Trip Assignment

Once trips were distributed by corridor, these were further analyzed based on actual destinations. For the proposed Huntington Avenue Development, it was determined that the 94-space parking facility would not be sufficient to meet the parking requirements of the building. As as result of this shortfall, some motorists would park in other facilities in the study area. Table IV A-16 summarizes the parking supply/demand conditions related to the Proposed Project.

TABLE IV A-16
Parking Supply and Demand Summary

	Long-Term	Short-Term	Total
Supply	94	0	94
Demand	231	65	296
Surplus (Deficit)	(137)	(65)	(202)

Notes:

1. Based on number of vehicle arrivals for work and non-work trips and vehicle occupancy rates.

Based on the number of work trips estimated in the trip generation analysis, a total of 231 long-term parking spaces would be required. As can be seen in Table IV A-16, with only 94 spaces provided on site, 137 additional long-term spaces are needed. This deficiency will result either in some vehicles shifting to other parking locations or employees changing mode of arrival to the site. Also noted in the table is an estimated 65 space short-term parking shortfall. This represents non-work trips generated by the Development. The limited number of short-term parkers will likely park in the Tent City, Prudential, or Copley Place garages or at metered curbside spaces.

Based on the available supply in the study area, it was estimated that if motorists were allocated among available parking facilities, approximately 41 percent or 94 long-term parkers destined for the Project would park on-site. The remaining 59 percent of Project parking

was assumed to be distributed between the Prudential Center garage (30 percent) and the Tent City garage (29 percent). Table IV A-17 presents a summary of vehicle assignment by parking facility.

TABLE IV A-17
On-site and Off-site Parking Assignment

Parking Facility (Percent)	Daily Vehicles	AM Peak Hour	PM Peak Hour
Project Site (41%)	94	61	70
Prudential Garage (30%)	69	44	51
Tent City Garage (29%)	68	43	51
Total Peak Parking Required	231	148	172

As indicated in Table IV A-16, 137 daily parkers are expected to park off-site in off-street facilities such as the Prudential Center, Copley Place, or Tent City, or, possibly at metered curbside spaces.

Project Access Drive Location

The analysis of Project impacts has assumed that the driveway to the parking facility will be located on Garrison Street. As was indicated in comments on the Draft EIR, the issue of parking access to this garage is a source of concern for the St. Botolph Street neighborhood. The main concern is the potential traffic impact on the neighborhood. For this Final EIR, several possible circulation/mitigation alternatives have been studied that would allow access on Garrison Street but still address the neighborhood's concerns about through traffic. Consideration also was given to the option of providing access to parking in the project at Harcourt Street instead of from Garrison Street.

The preferred plan places the garage entrance on Garrison Street with the truck loading docks on Harcourt Street, opposite the Copley Place truck entrance. It is

expected that most drivers accessing the driveway on Garrison Street from the south, southeast and southwest driving to the site would likely use St. Botolph Street, turn left onto Garrison Street and then enter the garage. It appears that this choice of St. Botolph Street over Huntington Avenue as a route to Garrison Street is based on a perceived savings in travel time.

During the morning peak hour, a total of 55 vehicles is predicted to enter the parking facility. Of these, 23 vehicles are expected to enter from the south and west via St. Botolph Street. From the east, vehicles traveling on Huntington Avenue would make a U-turn at West Newton Street. Vehicles traveling from the west via the Massachusetts Turnpike (I-90) would also make U-turns at this intersection, resulting in 17 new vehicle-trips in the morning peak hour into the garage. The remainder would approach from the west or north and drive via Huntington Avenue eastbound. Were the access moved to Harcourt Street, most vehicles from the southern approaches would still likely utilize St. Botolph and Garrison Streets and simply turn right onto Huntington Avenue and then right again into the Harcourt Street driveway. Vehicles from the Massachusetts Turnpike would still have to U-turn at West Newton Street while vehicles from the east would, however, be able to access the site by turning left at Harcourt Street, thereby reducing the number of left turns at West Newton Street by nine vehicles in the morning peak hour. All vehicles from the north and inner west would access the site in the same manner, regardless of the location of access driveways, with the exception that vehicles would turn right onto Harcourt Street instead of Garrison Street.

Based on the analysis presented in the Draft EIR, it appears that without any changes to the neighborhood street system, some project traffic would use St. Botolph Street to access the site, regardless of the location of the access driveway.

During the evening peak hour, were the driveway located at Harcourt Street, motorists leaving the site (estimated at 70 vehicles) would all have to turn right onto Huntington Avenue, since left turns are prohibited out of Harcourt Street, and either make a U-turn at Exeter Street or continue on to Dartmouth Street. This would reduce the number of exiting vehicles using Garrison

Street to access St. Botolph Street by 33 vehicles during the PM peak hour. As indicated in the Draft EIR, a shift in the garage access to Harcourt Street would benefit Garrison Street and the neighborhood primarily by reducing site exiting traffic since all drivers would be forced onto Huntington Avenue at the Harcourt Street signal.

As described in the Draft EIR, there are several serious concerns related to the shift of this driveway to Harcourt Street, however. The site is quite narrow (only 85 feet wide) and there simply does not appear to be sufficient width to accommodate both two active loading docks, an access/egress drive and still provide a sufficient area to accommodate the necessary stacking of exiting vehicles without blocking Harcourt Street. Since Harcourt Street only receives 15 seconds out of a 90-second traffic signal cycle, it is expected that there will be inadequate room to clear the queued vehicles. The main concern is that the site driveway would have to be located so close to the Harcourt Street signal that drivers exiting the garage would have insufficient room to queue without completely blocking southbound travel on Harcourt Street. Given the amount of truck activity that is generated by Copley Place on Harcourt Street, this represents a major concern. At times, truck activity on Harcourt Street would reach a level that would make the introduction of even more site traffic a highly questionable decision. The potential for vehicle tie-ups on Harcourt Street with delivery trucks, tractor trailers and private automobiles all attempting to use the site driveway would be substantial. In addition, any vehicles waiting to enter Harcourt Street from the eastbound side of Huntington Avenue would block a through traffic lane. Accordingly, it is expected that the consolidation of all loading and vehicular access activity onto Harcourt Street will encounter serious operational problems when combined with the existing truck dock serving Copley Place.

There are two different issues associated with the location of the garage entrance driveway: (1) the existing impact of through traffic on the neighborhood, and (2) the potential for new traffic impacts due to this project. Existing through traffic is of great concern to the community.

The Draft EIR indicated several potential measures to alleviate project impacts on Garrison Street and the community. One suggestion was to direct tenants to use Huntington Avenue by posting a Right Turn Only sign at the exit driveway on Garrison Street. Several more significant changes are possible, primarily by designating Garrison and St. Botolph Streets as one-way. This issue was raised in many of the comments on the Draft EIR.

In order to address resident concerns about excessive volumes of through traffic on St. Botolph neighborhood streets, several alternative circulation plans were analyzed. These options were selected for analysis on the basis of their abilities to: 1) reduce/eliminate through traffic on St. Botolph Street; 2) prevent commuters and visitors to the proposed 116 Huntington Avenue development site from traveling on St. Botolph Street; and 3) provide acceptable and convenient mobility for residents and visitors to the neighborhood.

Existing traffic volume measurements were utilized in the analysis to address concerns that have been raised by neighborhood residents regarding current traffic patterns. The implementation of any of the proposed alternatives would reduce the impact of existing traffic as well as traffic related to any future development. As mentioned elsewhere in this EIR, the Project Proponent is committed to working cooperatively with the City and the community to implement a mutually agreeable solution to existing and possible future problems on neighborhood streets. It is important to note that all of the options affect through traffic and community convenience which can be conflicting concerns. It should be noted that there is no one solution which completely addresses this complicated problem.

The following descriptions briefly highlight existing conditions and outline each of the six proposed circulation alternatives that were considered and their projected impacts on the neighborhood street traffic. The existing area circulation system, which was illustrated previously in Exhibit IV A-2, is a two-way circulation system.

Existing Conditions

The St. Botolph Street neighborhood is bounded by Huntington Avenue, Massachusetts Avenue, Columbus Avenue and Dartmouth Street. The major east-west roadways are Huntington Avenue and Columbus Avenue, with St. Botolph Street on the interior. Major north-south roadways include West Newton Street and Massachusetts Avenue to the west. Each of these roadways provide two-way access. There are a series of seven north-south streets, six of which are dead-end streets, between Huntington Avenue and the Southwest Corridor. Of all of the local streets in the area, only West Newton Street provides access across the Southwest Corridor. Further, only Garrison, West Newton and Cumblerland Streets provide a connection between Huntington Avenue and St. Botolph Street, serving primarily as access/egress for the neighborhood.

Currently, many drivers use St. Botolph Street rather than Huntington Avenue to/from Massachusetts Avenue, likely due to the perception that travel time is faster along this route.

As requested by the Boston Transportation Department, a series of travel time runs were made to compare St. Botolph Street with Huntington Avenue as a route to the Project site during the AM peak hour when through traffic is a more critical problem. For these travel time runs, two vehicles departed from the same point, the intersection of Massachusetts Avenue and Columbus Avenue, and traveled to Garrison Street. Both vehicles traveled northbound along Massachusetts Avenue. The first vehicle turned right onto to St. Botolph Street; the second vehicle continued northbound on Massachusetts Avenue and turned onto Huntington Avenue. The results of the travel time analysis are summarized in Table IV A-18. The table clearly shows that there is no real time savings by driving through the neighborhood. It might be concluded that the route chosen is one of personal preference with some drivers choosing to avoid the signals on Huntington Avenue at Massachusetts Avenue and at West Newton Street. These signals, however, favor the traffic proceeding along the route to the site.

TABLE IV A-18
Travel Time/
Delay Study
Results

Run Number[1]	Arterial Route[2] (Min/Sec)	Neighborhood Route[3] (Min/Sec)	Faster Route
1	1:48	1:52	Arterial
2	1:56	1:50	Neighborhood
3	1:59	2:10	Arterial
4	2:07	1:50	Neighborhood
5	1:55	2:00	Arterial
6	1:57	1:50	Neighborhood
7	1:50	1:50	No Difference
Average	1:56	1:55	

Notes

1. All trips began at the intersection of Massachusetts Avenue and Columbus Avenue and ended at the driveway entrance to the existing surface parking lot on the project site.

2. Arterial route consisted of Massachusetts Avenue to Huntington Avenue to Garrison Street.

3. Neighborhood cut-thorough route consisted of Massachusetts Avenue to St. Botolph Street to Garrison Street.

Street Change Alternatives

The following discussion summarizes the six alternatives studied. This analysis also assumes that access to the project site is on Garrison Street in all cases. The six circulation alternatives are shown in Exhibit IV A-8 and Exhibit IV A-9.

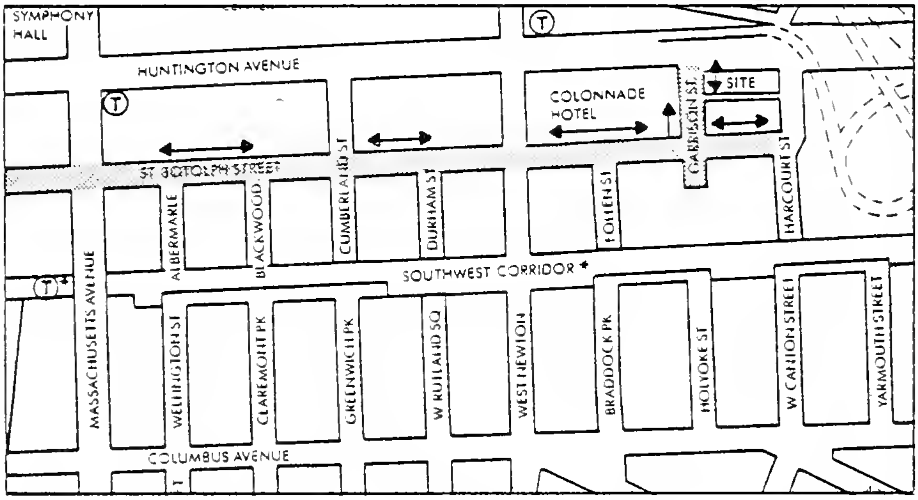
Alternative One

In this alternative, Garrison Street is designated one-way northbound from St. Botolph Street to Alley 401, the alley at the rear of the 116 Huntington Avenue site.

EXHIBIT IV A-8
Alternative Circulation Changes (1-3)

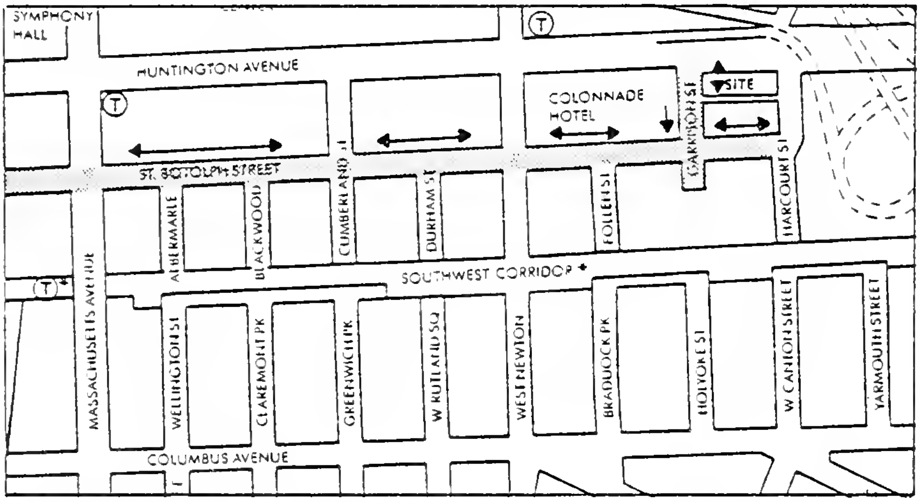
ALTERNATIVE 1:

Garrison Street One-Way Northbound from St. Botolph Street to Alley 401.



ALTERNATIVE 2:

Garrison Street One-Way Southbound from Alley 401 to St. Botolph Street.



ALTERNATIVE 3:

St. Botolph Street One-Way Westbound from Cumberland Street to Mass. Ave.

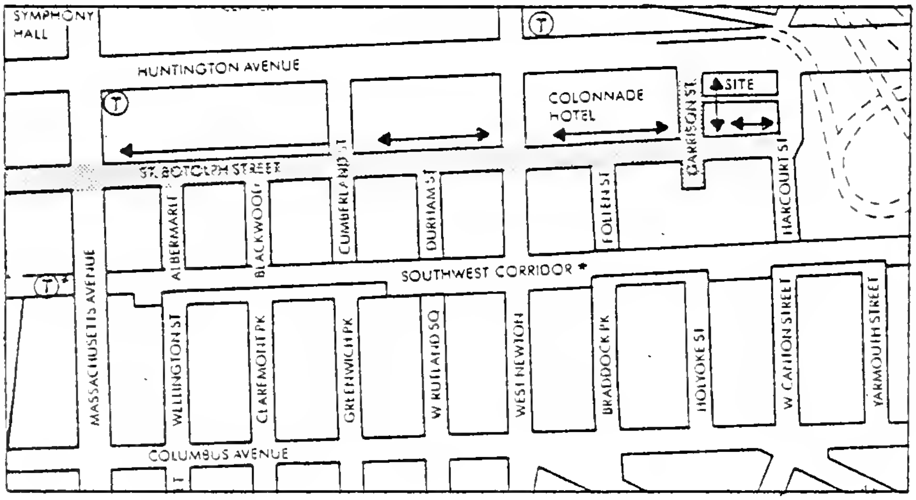


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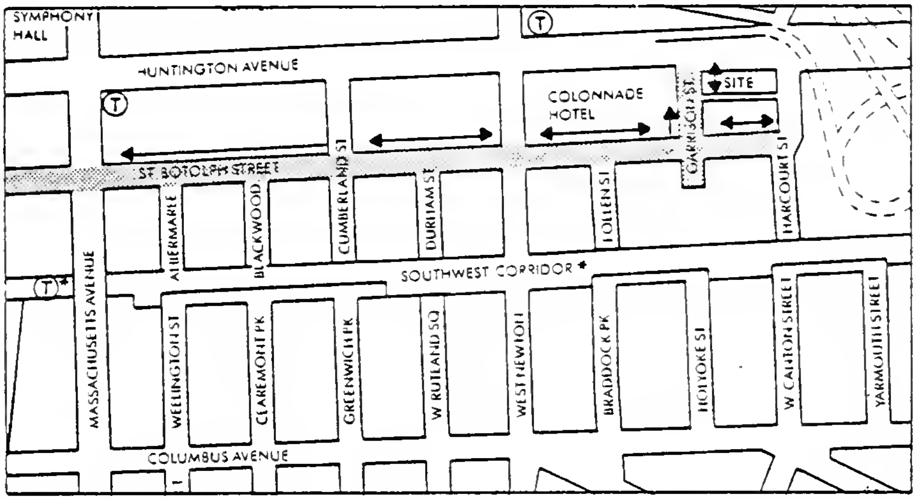
EXHIBIT IV A-9
Alternative Circulation Changes (4-6)

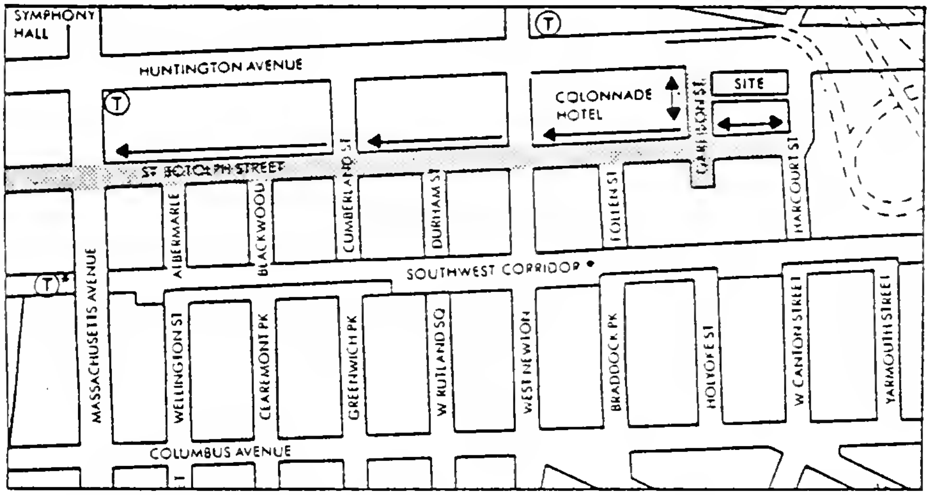
ALTERNATIVE 4:

St. Botolph Street One-Way Westbound from Cumberland Street to Mass. Ave. and Garrison Street One-Way Northbound from St. Botolph Street to Alley 401.



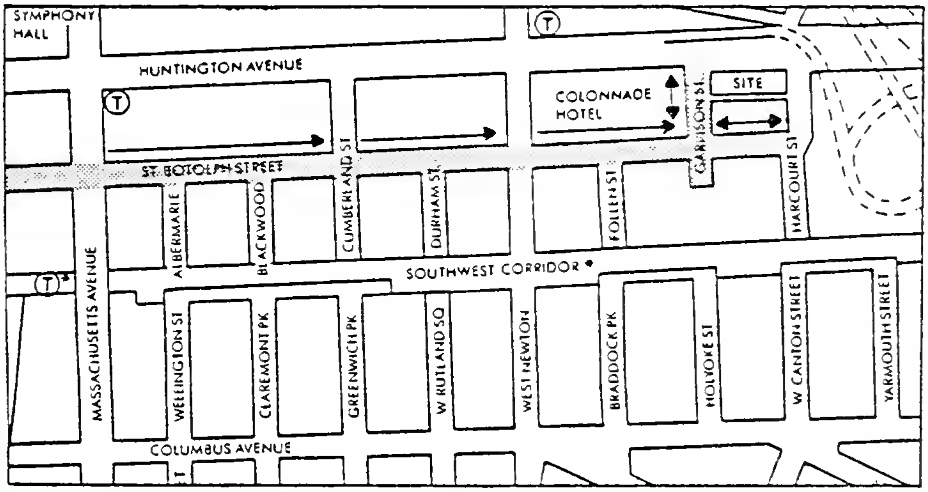
ALTERNATIVE 5:

St. Botolph Street One-Way Westbound from Garrison Street to Mass. Ave.



ALTERNATIVE 6:

St. Botolph Street One-Way Eastbound from Mass. Ave. to Garrison Street.



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The section from Huntington Avenue to the site driveway would have to remain two-way to provide access to the building. All site exiting traffic would be forced to turn right with the intent of this option being to force all future project traffic to exit from Garrison Street onto Huntington Avenue.

This alternative would prevent all vehicles exiting the Project from traveling on St. Botolph Street to reach Massachusetts Avenue. However, site entering traffic would not be affected and drivers could still use St. Botolph Street to enter the site. No appreciable travel time difference would result under this alternative. Additionally, existing trips southbound on Garrison Street would be removed (7 and 30 trips in the morning and evening peak hours, respectively). From a volume perspective, this alternative offers a small change, with the key point being that site exiting traffic (including PM peak traffic) would be forced to use Huntington Avenue.

Existing residential trips turning right from Huntington Avenue to Garrison Street southbound would likely instead use West Newton Street to St. Botolph Street to reach their destination thereby potentially increasing delays on West Newton Street. This option would not dramatically alter the convenience of entering or exiting the neighborhood.

Alternative Two

In this alternative Garrison Street would be designated as one-way southbound from the alley adjacent to the 116 Huntington Avenue site to St. Botolph Street. The intent of this option would be to prevent through traffic and site from using St. Botolph and Garrison Streets.

Inbound project traffic and existing through traffic currently using Garrison Street would probably only be removed from St. Botolph Street between West Newton and Garrison Streets. This option would definitely eliminate Garrison Street as a short-cut but would shift the burden to West Newton and Cumberland Streets. Two hundred thirteen existing AM peak hour and 92 PM peak hour trips would be affected. Not all vehicles prevented from traveling northbound on Garrison Street would shift to Huntington Avenue. Residents of St.

Botolph Street east of West Newton Street will also be required to use West Newton Street to access Huntington Avenue. This alternative would reduce the number of egress routes onto Huntington Avenue and would probably exacerbate congested conditions on West Newton Street.

Alternative Three

This option would designate St. Botolph Street as one-way westbound between Cumberland Street and Massachusetts Avenue. This would prevent traffic from entering St. Botolph Street at Massachusetts Avenue. This option would remove an estimated 130 AM peak and 160 PM peak existing eastbound trips from this segment of St. Botolph Street. While vehicles enteering the proposed 116 Huntington Avenue Project would be discouraged from using St. Botolph Street to reach Massachusetts Avenue, vehicles exiting the site would still have the St. Botolph Street option available as a route to the south and west.

Local residents would be required to access the neighborhood from the west via Huntington Avenue/Cumberland Street or Columbus Avenue/West Newton Street. Through-trips would probably be diverted to Massachusetts and Huntington Avenues or drivers might use Columbus Avenue and West Newton Street to reach Huntington Avenue. This alternative would probably increase travel times and delay through the neighborhood since one of three existing routes would be eliminated. Residents of the area would probably find that this alternative would make access into the neighborhood more difficult for them as well as for through traffic.

Alternative Four

This alternative would combine those proposed for Alternatives one and three, pairing a one-way northbound Garrison Street with a one-way westbound St. Botolph Street between Cumberland Street and Massachusetts Avenue. The intent of this option would be to deter through traffic to and from the site from using neighborhood streets. Existing eastbound through-traffic would also be prevented from using a Massachusetts Avenue/St. Botolph Street routing.

The impacts of this option would be to reduce through traffic on St. Botolph and Garrison Streets while

Huntington Avenue, West Newton and Cumberland Street volumes will increase. Approximately 140 AM peak and 190 PM peak hour trips would seek new routings. All project-related trips would enter and exit the site via the Huntington Avenue/Garrison Street site entrance.

Neighborhood residents' vehicle use would shift to Cumberland and West Newton Streets as may some of the through vehicles. This option would significantly affect neighborhood accessibility, making Cumberland and West Newton Streets the only way into the neighborhood. Clearly, through traffic would be confined to West Newton Street. It is expected that residents might find that this alternative does not provide adequate access into the neighborhood.

Alternative Five

This option would designate St. Botolph Street as one-way westbound from Garrison Street to Massachusetts Avenue. The intent of this option would be to prevent all through traffic from using St. Botolph Street.

This alternative would eliminate all eastbound through-trips on St. Botolph Street, making St. Botolph a local access street only. Some of these trips may divert to Columbus Avenue, West Newton Street and Huntington Avenue. Residents of St. Botolph Street would have access to the neighborhood only via Cumberland, West Newton or Garrison Street. Volumes will increase significantly on Huntington Avenue and Massachusetts Avenue. Delays will increase significantly on the major roadways, particularly Massachusetts and Huntington Avenues due to the necessary re-routing through the Massachusetts Avenue/Huntington Avenue intersection. Residents of St. Botolph Street may be even further inconvenienced due to increases in volume on West Newton Street and circuitous routings necessary to reach their destinations.

Alternative Six

The final option analyzed would designate St. Botolph Street as one-way eastbound from Massachusetts Avenue to Garrison Street. The intent of this option is to prevent westbound through traffic and project traffic from using St. Botolph Street.

This alternative would serve to deter westbound through vehicles and exiting project vehicles from St. Botolph Street while no deterrent would exist for eastbound through-traffic and project traffic. The eastbound traffic represents the major flow to be dealt with; a one-way eastbound option does little to address the problem. Residents of St. Botolph Street and adjacent side streets would be forced to use Cumberland, West Newton and Garrison Streets, to exit the community, increasing their travel time if they are heading west. Any westbound through traffic would be diverted from the neighborhood and would be forced to remain on Huntington Avenue to Massachusetts Avenue or use West Newton Street to Columbus Avenue.

Conclusion

Based on the review of the alternatives presented in this discussion, it appears that Alternative One would provide some traffic benefits to the neighborhood while minimizing project impacts and the inconvenience of reduced neighborhood access. Alternative Two would reduce traffic on Garrison Street but would not totally address the St. Botolph Street through traffic issue. Alternatives Three, Four, and Five would all significantly reduce the amount of eastbound through traffic while Alternative Six would probably provide the least benefit to the community. Based on the analysis contained herein, it is recommended that Alternatives One and Three be considered for implementation. Alternative One would primarily address the neighborhood's concerns about increased project traffic through the neighborhood while Alternative Three addeses the existing impact of through traffic in the St. Botolph neighborhood.

Recommendation

Based on a careful review of all of the factors involved and the desire to minimize operational problems, the location of the access drive on Garrison Street is still recommended. The Proponent is committed to working in a cooperative relationship with the Boston Transportation Department and the community to implement Alternative One or Three or any other plan that is deemed most beneficial to the community.

Truck Access and Deliveries

An off-street delivery vehicle/truck loading facility with two bays is proposed for the east side of the building on Harcourt Street. All deliveries to the site, including couriers, mail vehicles and suppliers to businesses in the building will be made to this location. The location of the facility on Harcourt Street should minimize potential Huntington Avenue congestion from truck parking and loading. However, because the loading entrance will be situated opposite the Copley Place truck entrance, Harcourt Street will occasionally be congested.

City of Boston zoning requirements call for three truck bays, however, the Proponent will be requesting a variance to provide two bays. Table IV A-19 presents a comparison of loading facilities in three recently constructed medium-sized buildings in Back Bay and in Downtown Boston. As shown in this table, the amount of square feet of building space per truck bay for the existing buildings ranges from 152,000 s.f. to 205,000 s.f. per bay, exclusive of solid waste containers. The 116 Huntington Avenue development, at 278,000 s.f. will provide one pay per 139,000 s.f. The current design of the loading area places the solid waste compactor to the side of the active loading bays. This analysis indicates that the provision of two active truck bays for the Proposed Project will be adequate.

TABLE IV A-19
Truck Loading Facilities in Medium-Sized Office Buildings (New Construction)

Building Location	Size (s.f.)	Number of Truck Bays[1]	Square feet per Bay
265 Franklin Street	410,000	2	205,000
260 Franklin Street	350,000	2	175,000
855 Boylston Street	152,500	1	152,500
116 Huntington Avenue[2]	278,000	2	139,000

Notes

1. Does not include bay for permanent dumpster.

2. Proposed project.

In response to another comment on the Draft EIR, it is estimated that the Proposed Project will generate approximately 59 deliveries per day. Distributed over a 10 hour day, an average of six deliveries per hour can be anticipated.[1] Delivery vehicles will feature a mix of trucks, vans, pickups, and auto deliveries.

ROADWAY IMPACTS

The analysis of roadway impacts has been conducted for two 1989 conditions. First, the expected traffic increases related to developments other than the 116 Huntington Avenue Project have been added to the observed existing volumes to develop a future No-Build network. Morning and evening peak hour volumes are shown in Exhibit IV A-10 and IV A-11, respectively. Second, the expected traffic increases generated by the Proposed Project have been added to the 1989 No-Build network to develop a future Build network. The 1989 AM and PM peak hour Build networks with the Project are illustrated in Exhibits IV A-12 and IV A-13.

Based on comments received on the Draft EIR, several revisions were made to Exhibits IV A-12 and IV A-13 to accurately reflect traffic increases expected from the project.

Intersection Analysis

Traffic Operations Measures - Signalized Intersections

An intersection level of service analysis was undertaken in the Project study area using current methods for all the signalized and unsignalized study intersections. These methods are defined in the 1985 Highway Capacity Manual (Special Report 209, as published by the Transportation Research Board, Washington, DC). While similar to the critical movement analysis procedures employed prior to the publication of Special Report 209, the new methods are more technically comprehensive and

1 Based on 0.21 arrivals per thousand s.f. of office and 0.24 arrivals per thousand s.f. of retail space as provided in the Copley Place EIR February 1980.

EXHIBIT IV A-10
1989 No-Build AM Peak Hour Traffic Volumes

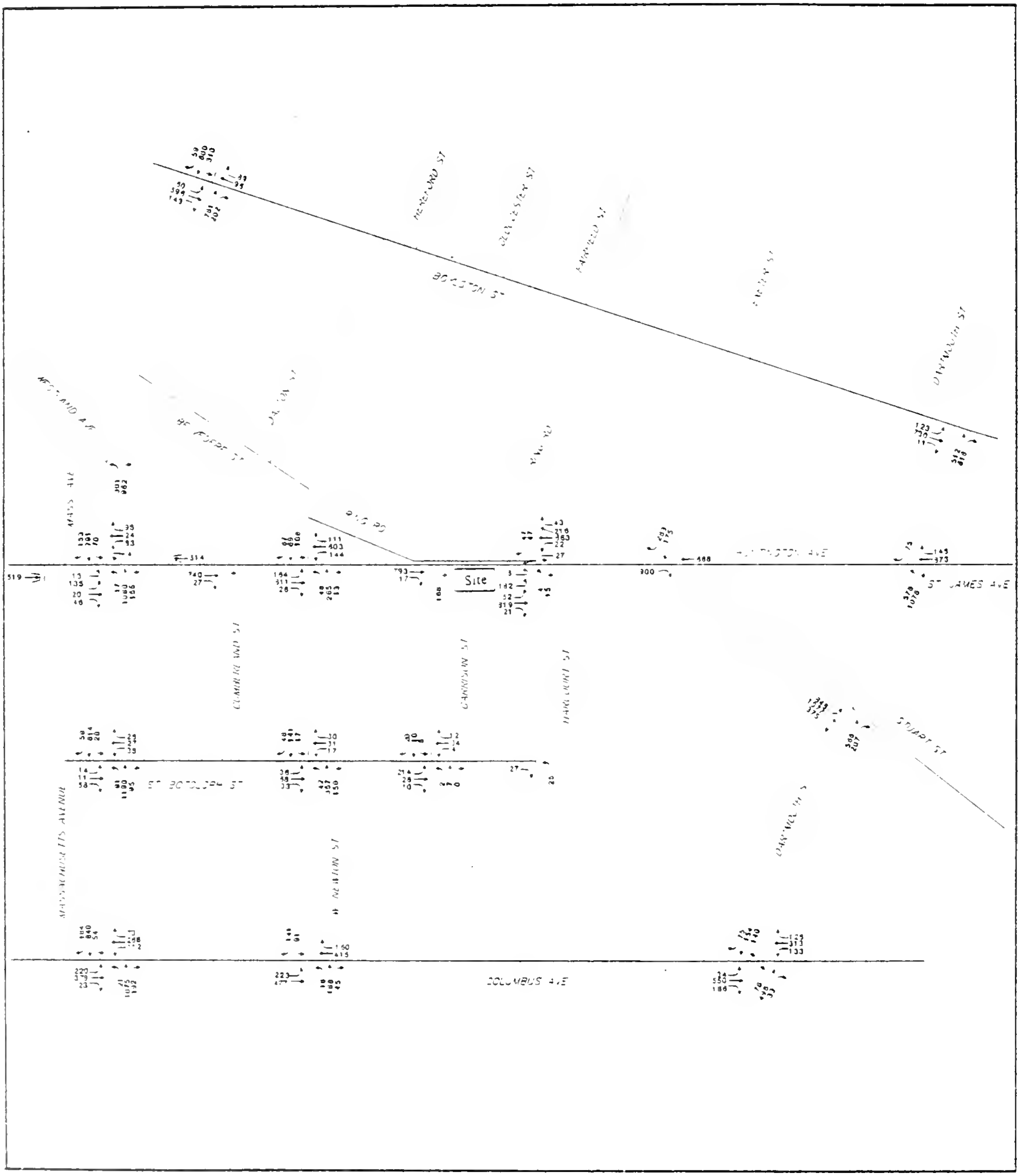


EXHIBIT IV A-11
1989 No-Build PM Peak Hour Traffic Volumes

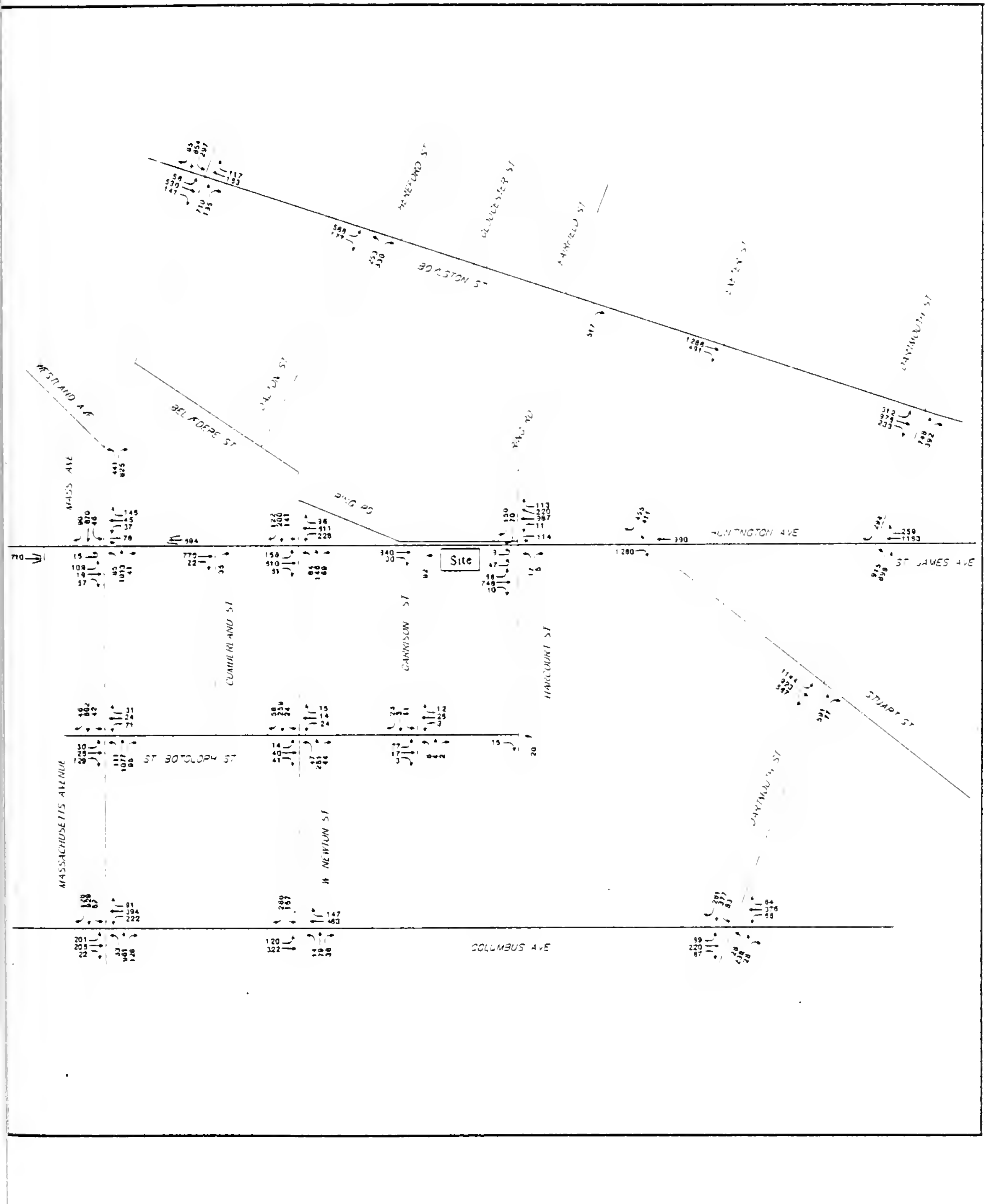


EXHIBIT IV A-12
1989 Build AM Peak Hour Traffic Volumes

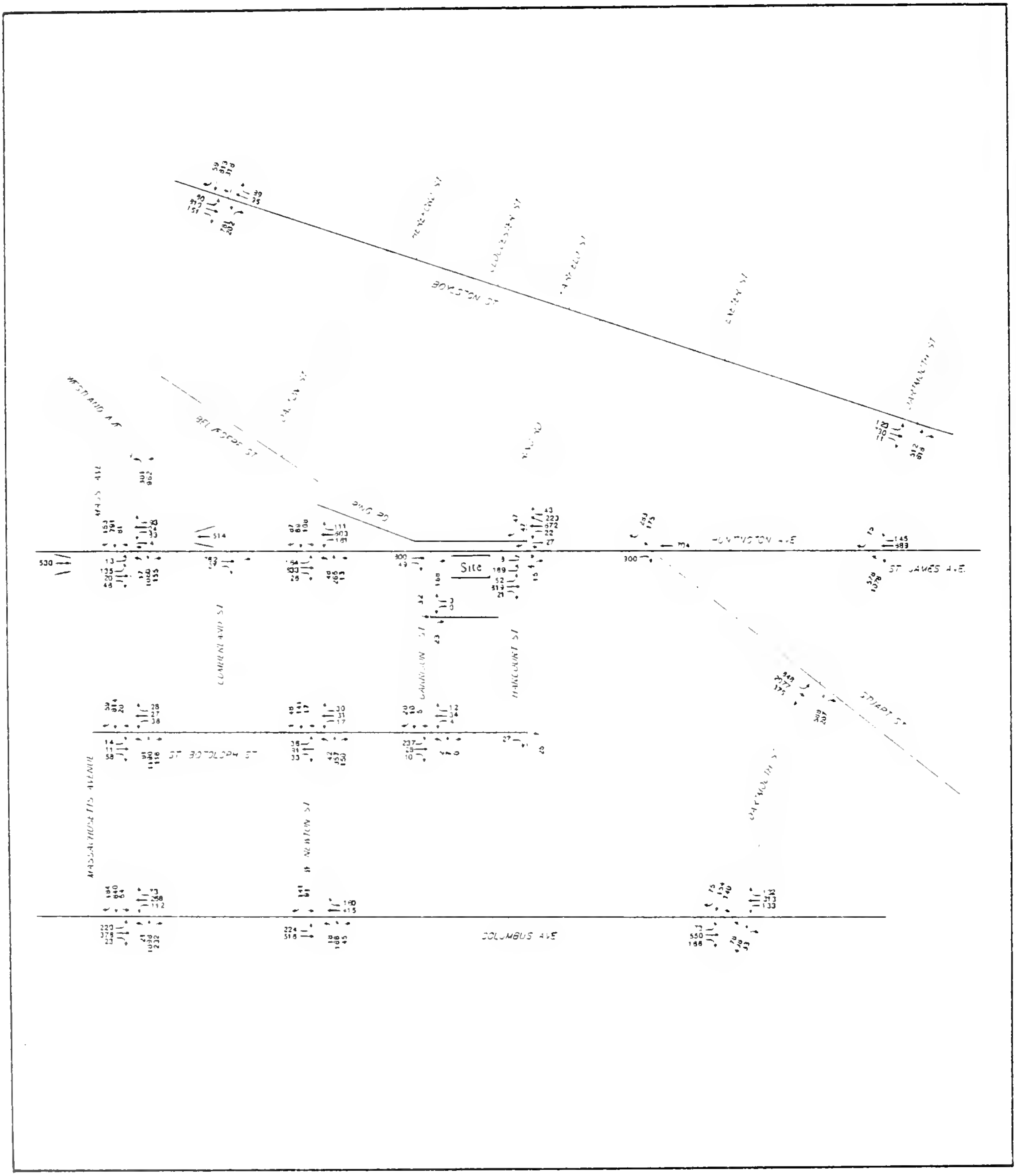
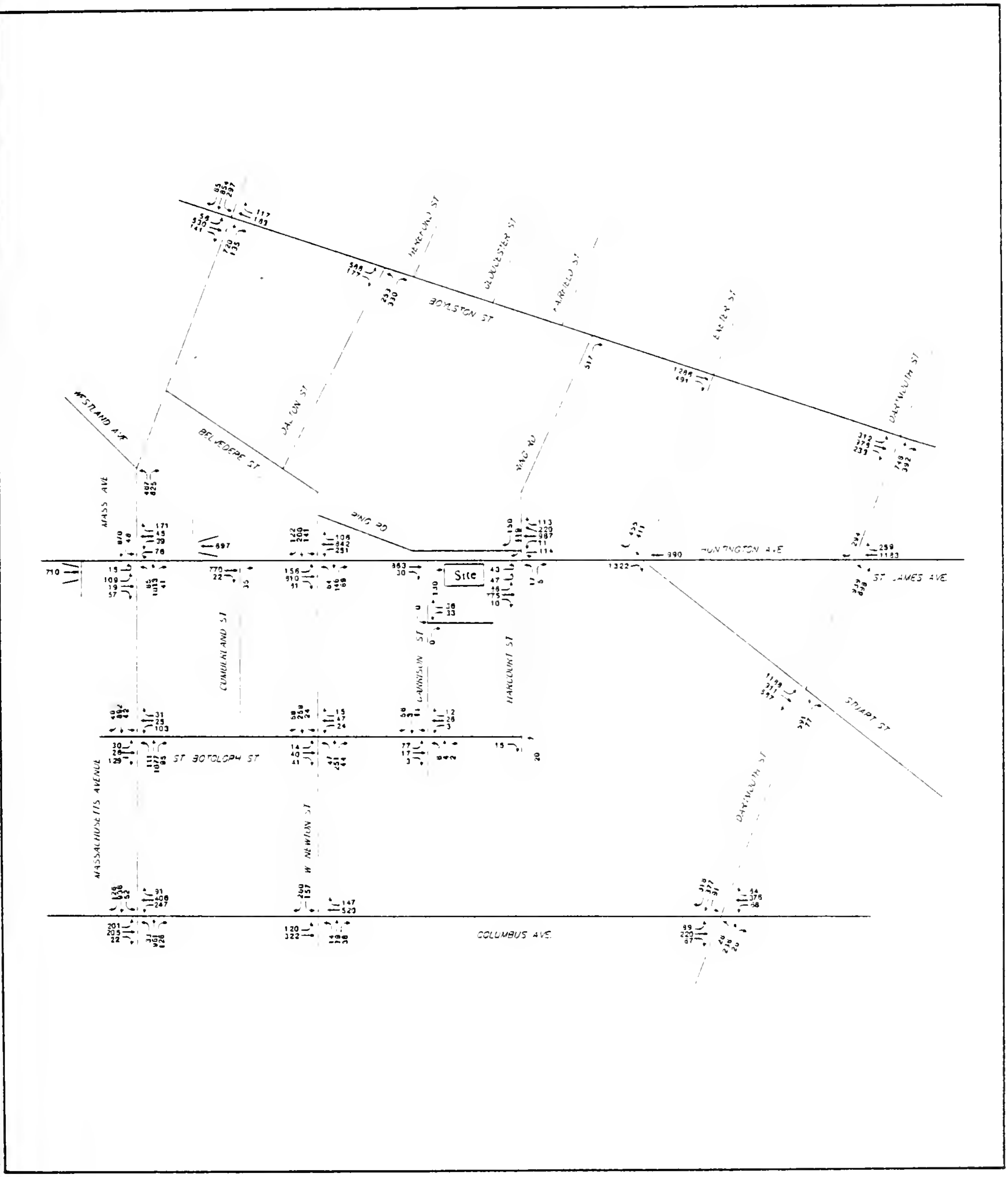


EXHIBIT IV A-13
1989 Build PM Peak Hour Traffic Volumes



consider more factors affecting traffic flow. The analysis relates roadway geometry (number of lanes, width, etc.), traffic demand and composition and traffic signal timing (if applicable) to the identification of intersection deficiencies.

Level of Service (LOS) is an index generally used to grade intersection operations. Level of service can range from LOS "A" to LOS "F". At LOS "A", the intersection operates at free-flow conditions. Typically, the intersection approach appears quite open and turning movements are made easily. Seldom, if ever, does a driver have to wait through more than one red signal indication. Level of Service "D" or better is generally considered acceptable, particularly in urban areas.

An intersection operating at LOS "E" is approaching capacity. This condition is characterized by consistent backups or queues of vehicles waiting to pass through the intersection. Capacity represents the maximum number of vehicles that can be processed during a given time frame, usually one hour. At capacity conditions, vehicles will always be waiting on approach roadways. In this situation, some motorists may experience significant delays. There are numerous intersections in the Boston metropolitan area which operate at capacity levels during peak demand periods. Level of Service "F" describes operations with delay in excess of 60 seconds per vehicle, considered unacceptable to most drivers, and is used for situations where volumes are in excess of capacity.

The volume-to-capacity (V/C) ratio is another measure of quality of traffic flow. As the V/C ratio approaches 1.00, motorists experience longer and longer delays. V/C ratios in excess of 1.00 are fairly common in Boston, particularly on minor approaches to major roadways or intersections.

For signalized intersections, level of service is defined in terms of time delay, an indicator of fuel consumption and travel time. The delay is stated in terms of average stopped delay per vehicle. Table IV A-20 summarizes the criteria for signalized intersection level of service.

TABLE IV A-20
Level of Service Criteria for Signalized Intersections

Level of Service	Stopped Delay per Vehicle (seconds)
A	$\leq$5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	>60.0

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington, D.C., 1985.

Pedestrian activity, number of buses stopping per hour, parking activity and other factors which contribute to the operating characteristics of an intersection are incorporated into the analysis techniques.

Traffic Operations Measures - Unsignalized Intersections

Level of service for unsignalized intersections is based on the number of acceptable gaps available in the major street traffic flow that may be utilized by minor street vehicles. The criteria shown in Table IV A-21 are based on the available reserve (or unused) capacity, measured in passenger cars per hour, for the minor street movement in question. The table also includes a qualitative index of delay to minor street traffic.

A total of 13 study area intersections were analyzed, including 10 signalized and three unsignalized intersections. These were selected based on the criterion established by MEPA which required analysis of intersections which would carry 20 percent or more of Project traffic. In addition, the intersections of Huntington Avenue/Harcourt Street and Harcourt Street/St. Botolph Street were analyzed response to requests made by the City of Boston Transportation Department and the St. Botolph Street neighborhood.

TABLE IV A-21
Level of Service Criteria for Unsignalized Intersections

Reserve Capacity	Level of Service	Expected Delay to Minor Street Traffic
>400	A	Little or no delay
300-399	B	Short traffic delays
200-299	C	Average traffic delays
100-199	D	Long traffic delays
0-99	E	Very long traffic delays

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington, D.C., 1985.

Intersection Analysis Results

The results of the signalized and unsignalized analysis for the AM peak hour are presented in Tables IV A-22 and IV A-23, respectively. PM peak hour results are presented in Tables IV A-24 and IV A-25, respectively. As stated earlier, this analysis assumes site access is on Garrison Street. Overall levels of service at major intersections are not expected to change significantly if access is provided via Harcourt Street. The impacts of a Harcourt Street access are discussed elsewhere in this report. Currently, during the morning peak hour at the Huntington Avenue/West Newton Street intersection, northbound vehicles exiting from West Newton Street experience lengthy delays due to the provision of one 15-foot travel lane. This intersection currently operates overall at LOS "C" with an overall volume-to-capacity (V/C) ratio of 0.69. During the evening peak hour, the intersection of Massachusetts Avenue and Columbus Avenue operates at LOS "E" with a V/C ratio of 0.99. This results from insufficient green time for eastbound and westbound traffic on Columbus Avenue, currently timed for 20 seconds out of an 80-second cycle during the peak periods.

A second intersection experiencing delays in the PM peak hour is the Columbus Avenue/West Newton Street intersection. This intersection is situated at the opposite

TABLE IV A-22
Signalized Intersection Level of Service Analysis
AM Peak Hour[1]

	Existing			No-Build 1989			Build 1989		
	Delay[2]	LOS[3]	V/C[4]	Delay	LOS	V/C	Delay	LOS	V/C
Massachusetts Avenue & St. Botolph Street	23.4	C	0.71	31.2	D	0.74	51.9	E	0.79
Massachusetts Avenue & Huntington Avenue	9.4	B	0.63	10.4	B	0.69	10.6	B	0.70
West Newton Street & Huntington Avenue	18.6	C	0.69	22.6	C	0.75	22.7	C	0.76
Massachusetts Avenue & Boylston Street	15.6	C	0.8	21.8	C	0.83	24.3	C	0.85
Massachusetts Avenue & Columbus Avenue	15.9	C	0.77	22.3	C	0.88	22.5	C	0.88
West Newton Street & Columbus Avenue	11.5	B	0.56	15.5	B	0.67	15.5	B	0.67
Dartmouth Street & St. James Avenue	12.7	B	0.63	14.5	B	0.72	15.1	C	0.72
Harcourt Street & Huntington Avenue	5.9	B	0.46	5.9	B	0.49	5.9	B	0.49
Columbus Avenue & Dartmouth Street	12.4	B	0.72	>60	F	1.14	>60	F	1.20
Stuart Street & Dartmouth Street	12.2	B	0.63	14.5	B	0.77	14.5	B	0.77

Notes

1. Values presented in this table represent an average result for all intersection approaches. Individual approaches may operate better or worse than the overall intersection condition. Refer to appendix for a more detailed table.

2. Delay represents the average delay measured in seconds for all intersection approaches.

3. LOS = level of service.

4. V/C = volume-to-capacity ratio.

TABLE IV A-23
Unsignalized Intersection Level of Service Analysis
AM Peak Hour[1]

	Existing		No-Build 1989		Build 1989	
	LOS[1]	ARC[2]	LOS	ARC	LOS	ARC
Huntington Avenue & Garrison Street	A	705	A	695	A	695
St. Botolph Street & Garrison Street	A	661	A	.661	A	618
St. Botolph Street & West Newton Street[3]	C	0.66	C	0.69	D	0.71

Notes:

1. LOS = level of service.

2. ARC = available reserve capacity.

3. The intersection of St. Botolph Street and West Newton Street is a four-way stop controlled intersection. For four-way, stop-controlled intersections, a special unsignalized analysis technique is used which relates proportional vehicle flows to capacity and is reported as a volume-to-capacity (V/C) ratio. Refer to pages 10-13 of the 1985 Highway Capacity Manual.

TABLE IV A-24
Signalized Intersection Level of Service Analysis
PM Peak Hour[1]

	Existing			No-Build 1989			Build 1989		
	Delay[2]	LOS[3]	V/C[4]	Delay	LOS	V/C	Delay	LOS	V/C
Massachusetts Avenue & St. Botolph Street	31.4	D	0.84	35.8	D	0.86	40.5	E	0.93
Massachusetts Avenue & Huntington Avenue	11.0	B	0.72	11.3	B	0.75	13.0	B	0.77
West Newton Street & Huntington Avenue	18.3	C	0.75	20.2	C	0.81	20.9	C	0.85
Massachusetts Avenue & Boylston Street	15.8	C	0.81	17.3	C	0.85	17.3	C	0.85
Massachusetts Avenue & Columbus Avenue	*[5]	E	0.99	>60	F	1.08	>60	F	1.08
West Newton Street & Columbus Avenue	>60	F	0.67	>60	F	0.72	>60	F	0.74
Dartmouth Street & St. James Avenue	13.0	B	0.61	16.7	C	0.85	17.0	C	0.86
Harcourt Street & Huntington Avenue	7.4	B	0.63	7.4	B	0.63	9.5	B	0.69
Columbus Avenue & Dartmouth Street	9.5	B	0.51	9.5	B	0.52	9.5	B	0.53
Stuart Street & Dartmouth Street	10.6	B	0.63	30.9	D	0.81	35.1	D	0.82

Notes

1. Values presented in this table represent an average result for all intersection approaches. Individual approaches may operate better or worse than the overall intersection condition. Refer to appendix for a more detailed table.

2. Delay represents the average delay for all intersection approaches.

3. LOS = level of service.

4. V/C = volume-to-capacity ratio.

5. Delay at LOS E is estimated at between 40 and 60 seconds, based on the 1985 Highway Capacity Manual.

TABLE IV A-25
Unsignalized Intersection Level of Service Analysis
PM Peak Hour[1]

	Existing		No-Build 1989		Build 1989	
	LOS[1]	ARC[2]	LOS	ARC	LOS	ARC
Huntington Avenue & Garrison Street	A	673	A	673	A	613
St. Botolph Street & Garrison Street	A	826	A	826	A	794
St. Botolph Street & West Newton Street[3]	C	0.68	D	0.72	D	0.74

Notes:

1. LOS = level of service.

2. ARC = available reserve capacity.

3. The intersection of St. Botolph Street and West Newton Street is a four-way stop controlled intersection. For four-way, stop-controlled intersections, a special unsignalized analysis technique is used which relates proportional vehicle flows to capacity and is reported as a volume-to-capacity (V/C) ratio. Refer to pages 10-13 of the 1985 Highway Capacity Manual.

end of West Newton Street from Huntington Avenue and delays (LOS "F" with a V/C of 0.67) result from the provision of one 15-foot travel lane on the southbound approach of West Newton Street. The fact that the overall V/C ratio is only 0.67 yet operates at LOS "F" indicates that delays are primarily experienced on West Newton Street.

Project-Related Impacts

As noted previously, there are several intersections in the study area which either operate at poor levels of traffic service under existing conditions or are expected to have operational difficulties in the future. The Proposed Project is expected to result in minimal changes in traffic operating conditions. These changes and other project-related impacts are described in the following paragraphs.

During the morning peak hour, three intersections experience a decrease in average levels of service from the 1989 No-Build to Build cases. The Massachusetts Avenue/ St. Botolph Street intersection decreases from LOS "D" to LOS "E" with average overall delay increasing by 20.7 seconds in the morning peak. This condition is most prevalent for the northbound vehicles on Massachusetts Avenue with an LOS "E" to LOS "F" decrease occurs during the morning peak hour. The presence of parking on each approach to this intersection contributes considerably to this condition.

The intersection of Dartmouth Street with Huntington Avenue and St. James Avenue also experiences a decrease from LOS "B" to LOS "C" from the 1989 No-Build to Build cases as a result of a small increase in average delay from 14.5 seconds to 15.1 seconds. This intersection has adequate capacity to accommodate additional vehicles during the morning peak hour. The third intersection projected to experience a decrease in level of service is the unsignalized intersection of St. Botolph Street and West Newton Street where a decrease from LOS "C" to LOS "D" from the 1989 No-Build to Build cases.

A reanalysis of the intersection of Massachusetts Avenue and Columbus Avenue resulted in a change in the level of service as reported in the Draft EIR from LOS "D" to LOS "C." This represents no change in level of service or V/C ratios observed under No-Build conditions.

One intersection which does not experience a decrease in level of service as a result of the proposed development will operate at LOS "F" under the No-Build condition is the intersection of Columbus Avenue and Dartmouth Street. This is primarily due to an increase of 202 northbound vehicles on Dartmouth Street over existing conditions. Currently, only one northbound travel lane is provided resulting in long delays for this approach.

During the evening peak hour, only one intersection, Massachusetts Avenue and St. Botolph Street, experiences a decrease in level of service, from LOS "D" to LOS "E" from the 1989 No-Build to Build cases. This intersection will experience an average overall increase in delay of 14.7 seconds and is primarily a result of increased delays to westbound motorists on St. Botolph Street whose delay in entering the Massachusetts Avenue intersection is expected to be greater than one minute in the Build case. On the Massachusetts Avenue northbound approach to the intersection, an existing capacity condition deteriorates slightly from the No-Build to Build cases.

During the evening peak hour, the Columbus Avenue/ Massachusetts Avenue intersection continues to operate at LOS "F", a condition which is present both with or without the proposed Huntington Avenue development. The intersection of Columbus Avenue and West Newton Street operates at LOS "F" and this is primarily related to southbound motorists on West Newton Street who experience long delays as a result of an inadequate number of lanes and insufficient green time during the signal cycle.

The analysis of intersection operating conditions depicted in Tables IV A-19 through IV A-22 represents a conservative situation during one morning and afternoon hour a day. It is based upon an assumption that vehicular demand generated by the Development is not constrained by the limited on-site parking. In reality, the previously described on-site parking shortfall of 137 long-term spaces may result in a shift to a lower automobile utilization percentage in mode of arrival. This could include a higher utilization of transit and carpooling. For example, a reduction in vehicle traffic associated with the proposed development as a result of the parking constraint, which assumes only 25 percent of employees would travel by automobile versus the initial assumption of 37 percent. This would correspond to

approximately 115 vehicles using the area street system during the afternoon peak hour. Compared to the vehicle-trip estimate of 172 used for the worst-case analysis, this represents a 33 percent reduction in vehicle-trips. More detailed information on this issue is presented in the mitigation section under "Parking Changes."

Roadway Deficiencies Summary

The intersection level of service analyses previously discussed provides a comparative basis for describing roadway conditions in the study area under varying volume conditions. In addition to these analyses, field observations have identified several locations throughout the study area where driver and pedestrian mobility are hindered.

There are many elements of urban streets that have an impact on operating conditions, and a capacity analysis alone does not always allow the identification of these issues. Therefore, additional information developed for area roadways during field observations and information provided by members of the community is noted in the subsequent paragraphs. The listing of these data provides a summary of observed operating conditions that lead to identification of potential problem areas as well as mitigation measures.

The following factors have been identified as reducing traffic flow and restricting mobility during peak hours:

- Narrow lanes, curb parking, and pedestrian crossings on St. Botolph Street;
- Narrow lanes, illegal curb parking, and pedestrian crossings on the northbound approach to the West Newton Street/Huntington Avenue intersection;
- Double parking in front of the Marriott Hotel adjacent to Harcourt Street-mostly due to taxicab queuing;
- Vehicle conflicts at the Huntington Avenue/Harcourt Street intersection with vehicles turning right from the Prudential Center Ring Road onto Huntington Avenue conflicting with eastbound U-turning vehicles from Huntington Avenue;

- One narrow lane, curb parking, and pedestrian crossings on the Dartmouth Street northbound approach to Columbus Avenue;

- Buses parking along both sides of Huntington Avenue with engines left idling;

- Pedestrian crossings across the relatively wide section of Huntington Avenue conflict with vehicular flows. Many pedestrians choose to cross at midblock locations or at presently uncontrolled locations such as at Garrison Street;

- U-turns on Huntington Avenue at West Newton Street are difficult to maneuver;

- Double and triple parking in front of the Colonnade Hotel and the Greenhouse;

- As a result of congestion at the Massachusetts Avenue/Huntington Avenue signal, St. Botolph Street residents have indicated that vehicles from the south use St. Botolph Street to Garrison Street and some of these vehicles travel at unsafe speeds; and,

- The existing raised island barrier Harcourt Street and St. Botolph Street is often traversed by vehicles wishing to use this as a short cut.

The above observations summarize some of the operational problems on the study area roadway system. The intersection level of service analyses provide a more quantitative indication of problems at specific intersection locations. Measures to mitigate the potential impact of the Development on these problem areas, presented in a following subsection of this chapter, address both general traffic management problems as well as specific roadway capacity problems to the extent feasible.

A consideration of localized impacts on the intersections immediately adjacent to the project site as a result of using a lower vehicle occupancy rate (VOR) indicated no significant affect on predicted levels of service.

PARKING IMPACTS

Project Parking Demand

As described previously, the number of parking spaces required by the Project can be estimated by employing the same assumptions used in the trip generation forecasts for the Project. Parking requirements are divided into long-term employee parking and short-term shopper/ business parking. Based on the conservative assumptions built into the travel forecasts, it was estimated that the Proposed Project, at completion and full occupancy, will generate a peak demand for 296 parking spaces, including 231 long-term spaces and 65 short-term spaces.

Parking Supply

The Proposed Project includes doubling of the parking supply on the site. The existing surface parking lot contains 48 parking spaces and after construction of the Project, there will be 94 spaces on-site. The existing lot, which on a typical day parks 36 vehicles, is currently occupied by employees of the Project Proponent and by former parkers from the Tent City site. These parkers will be relocated to either the Tent City garage or to the central garage at Copley Place when the 116 Huntington Avenue Project commences construction. As a result, they were considered in the parking demand analysis.

Parking Management

All parking on the Project site will be for building users. None of these spaces will be designated for use on a short-term hourly or daily basis. This designation of spaces is in accordance with the Boston Parking Freeze requirements.

Parking Supply/Demand Summary

As described previously, it is estimated that the short term parking supply shortfall will likely be met by parking supply in other area public parking facilities such as the Prudential Center, Tent City and Copley Place or by curbside metered spaces. At present, there are 856 parking spaces in Copley Place, 1,626 public parking spaces in the Prudential Center garages and 101 public spaces planned for the Tent City garage.

Curbside parking meters are provided on the south side of Huntington Avenue, on both sides of Garrison Street and on portions of St. Botolph Street. It should be noted that the Proposed Project would eliminate three parking spaces immediately in front of the site.

As a result of the long-term parking deficit, a shift in travel characteristics from those assumed in the analysis would likely occur through an increase in vehicle occupancy rates and through an increase in non-automobile mode share. As estimated previously, a decrease in the automobile mode share for employees from 37 percent to 30 percent would decrease the overall parking needs by 43 vehicles from 231 to 188 spaces.

Reductions of this magnitude in auto travel appear to be attainable since they already occur in other sections of Downtown Boston where public parking is limited and expensive. Since available public parking in the study area is expensive, employee shifts to transit and increased ridesharing activity will likely result. This is supported by the previously mentioned limited survey conducted of office employees in Copley Place, only 23 percent of whom drove or rode to work on a regular basis.

PUBLIC TRANSPORTATION IMPACTS

Transit Trip Generation

Based on the trip generation assumptions referenced previously, the proposed 116 Huntington Avenue Project will generate 1,930 daily transit trips. Peak hour transit trips from the Project account for a considerable portion (42 percent) of the daily transit trips with 394 inbound transit trips in the morning peak hour, and about 426 outbound trips in the evening peak hour.

Other development activity will also generate new demands for transit service. In addition to those new projects outlined in the traffic analysis section of this chapter, several additional projects in Cambridge, Downtown Boston, and South Boston will contribute to significantly higher transit ridership in the future.

Transit Trip Distribution

The distribution of transit trips among the major transit modes (bus, rapid transit and commuter rail) is based on the 1982 Cordon Counts for Downtown Boston because the proposed development (as well as the entire Back Bay) lies within the downtown corridor. For the 116 Huntington Avenue Development, approximately 60 percent of work-related Project trips are expected to be made by public transportation. As shown in in Table IV A-26, the 1982 Cordon Count indicates that 68 percent of PM peak hour transit trips leaving the downtown cordoned area were on rapid transit (including the Green Line), 18 percent were on buses, and 14 percent were on commuter rail.

TABLE IV A-26
Distribution of Peak Hour Transit Trips by Mode

Mode	Line	1982 Cordon Count (Downtown)
Bus		18%
Rapid Transit	Green	13%
	Other Lines	55%
Total		68%
Commuter Rail		14%
Total		100%

Rapid Transit Analysis

In order to provide a basis for evaluating the impacts of the No-Build and Build alternatives on the rapid transit system, Table IV A-27 compares current ridership to current planning capacity during the PM peak hour. This is generally considered to be the period of highest demand on the system when work and non-work trips are being made. As indicated in this table, trains on the Orange Line/North are currently somewhat overcrowded during the PM peak hour. Based on the current level of demand, that segment should provide 10 percent more capacity than it does currently.

TABLE IV A-27
Existing
Rapid Transit
Capacity and
Ridership:
PM Peak Hour
Outbound

Line	Existing Planning Capacity	Existing Ridership	Ridership as Percent of Capacity
Red Line/North	10,800	7,140	66%
Red Line/South	11,520	11,190	97%
Green Line/West	7,500	10,000	133%
Green Line/North	2,600	1,100	42%
Orange Line/North	9,300	10,270	110%
Orange Line/South	9,300	7,080	76%
Blue Line/North	6,600	6,120	93%

Notes

1. Data from the Red Line and Green Line/West were obtained by Fall, 1986 Vanasse/Hangen field observations.

2. Data for Orange, Blue and Green/North lines derived from 1984 MBTA data.

Due to the nature of commuter rail and bus operations and the ability to expand services as required, the analysis of transit impacts focuses primarily on rapid transit impacts. This is described below.

Rapid Transit Trip Assignment

The assignment of rapid transit trips to the various rapid transit lines was based on each line's share of total rapid transit ridership in 1984. This distribution is shown in Table IV A-28.

However, a 110 percent utilization rate usually would not cause severe problems, and the current capacity may even be a reasonable target given the underutilization (76 percent) on the south half of the line. The Green Line/West operates at an unacceptable 133 percent of planning capacity. This level of capacity shortfall

causes severe operational problems including excessive dwell times, which result in further capacity losses.

TABLE IV A-28
Assignment of Rapid Transit Trips - PM Peak Hour Outbound

Line/Direction	Percent Distribution	Project Trips
Red/North	12	35
Red/South	23	66
Blue/North	12	35
Orange/North	20	58
Orange/South	14	41
Green/West	17	49
Green/North	2	6
Total	100	290

As mentioned previously, by 1989, several new development projects will be completed. These projects will generate transit traffic estimated at approximately 11,235 additional outbound trips in the evening. In addition, the MBTA will have expanded capacity on several of its rapid transit lines. The impact of the proposed 116 Huntington Avenue Project on the rapid transit system will be to increase ridership on each line by an estimated 0.4 percent over the No-Build alternative. This Project is expected to add approximately 268 inbound transit trips in the morning peak hour. In the evening, 290 outbound trips are expected.

Table IV A-29 presents a comparison of the 1989 No-Build with the 1989 Build PM peak hour transit ridership projections. The projected volumes shown in this table indicate that with both background development and the proposed 116 Huntington Avenue Project, ridership development and the proposed 116 Huntington Avenue Project, ridership will be well below planning capacity on four rapid transit line segments. The Blue Line, for

which no capacity increases have been announced by the MBTA, is projected to operate at 115 percent of planning capacity. Ridership will exceed planning capacity significantly on the Green Line/West and very slightly on the Orange Line/North, but in both cases, projected conditions are more favorable than current conditions.

TABLE IV A-29
1989 Rapid Transit Ridership and Capacity: PM Peak Hour

Line/ Segment	1989 Planning Capacity	1989 No-Build		1989 Build	
		Ridership	Percent of Capacity	Ridership	Percent of Capacity
Red/North	16,200	8,563	53%	8,598	53%
Red/South	17,280	14,017	81%	14,083	82%
Green/West	9,630	12,016	124%	12,065	125%
Green/North	2,600	1,338	51%	1,344	52%
Orange/North	12,400	12,641	102%	12,699	102%
Orange/South	12,400	8,742	71%	8,783	71%
Blue/North	6,600	7,543	114%	7,578	115%

Source: 125 Summer Street Traffic Impact and Access Plan, Vanasse Hangen Brustlin, Inc., October, 1986.

Note: Car capacities are the planning figures used by the MBTA. Heavier loads can be carried and are often observed on the system.

The 116 Huntington Avenue Project will add an estimated 49 peak hour outbound trips on the Green Line/West and these trips will likely be spread over the various branches B,C,D and E. It is not expected that this increase will significantly affect service on these branches.

In sum, the 116 Huntington Avenue Development will increase rapid transit demands by 0.4 percent. This small increase does not appear to represent a significant impact on the rapid transit system.

MITIGATION MEASURES

Although much of this traffic would occur even without the Proposed Project, it is important to recognize the continuing growth trend in the Back Bay and South End neighborhoods and to outline a comprehensive program of measures to mitigate potential adverse impacts. This is especially relevant because of the residential character of large portions of these neighborhoods and their proximity to the new development site.

Traffic volumes on Back Bay and South End roads can be expected to continue growing throughout the remainder of the decade. As demonstrated in the impact analysis subsection, most intersections in the study area will experience some decrease in levels of traffic service. Four locations, however, will be handling volumes at or near their traffic-handling capacity during the morning and afternoon peak hour.

This subsection presents a mitigation program in four major categories: Demand Reduction/Management, Traffic Operations, Parking Changes, and Institutional Adjustments. Table IV A-30 summarizes the program and notes the implementing agency wherever applicable.

DEMAND REDUCTION/MANAGEMENT

Rather than respond to problems created by uninhibited traffic growth, an effective alternative often involves reducing the amount of traffic generated and/or managing it more efficiently. Much can be done at the employer level to develop programs in this area and to provide the proper impetus and attitude to make it work. To reduce auto use, the Proponent will encourage ride-sharing for its tenants and employees as well as the use of mass transportation and other measures to reduce vehicle travel. This will be accomplished through the following efforts:

- Promotional material on ridesharing in the building newsletter to tenants.

- Publication of commuter rail schedules and other MBTA information on the premises.

TABLE IV A-30
Summary of Mitigation Program

Category		Mitigation Measure	Implementing Agency
Demand Reduction/ Management	o	Employer-sponsored program to encourage non-auto travel incuding carpools and vanpools	Project Proponent, Caravan for Commuters, Inc
	o	Promotion of "T" pass sales	Project Proponent
	o	Secure bicycle parking	Project Proponent
Traffic Operations (see Table IV A-31)	o	Modify traffic circulation patterns	Boston Transportation Department (BTD)
	o	Remove parking at several intersection approaches	BTD
	o	Increase right-turn capacity	BTD
	o	Taxi stand improvements	BTD
	o	Signal timing	BTD
	o	Restrictions on deliveries	BTD
	o	Pedestrian signal improvements	BTD
Parking Changes	o	Constrained parking supply	
	o	Additional peak period parking restriction	BTD
	o	Off-street resident parking	Project Proponent
Institutional Adjustments	o	Increased enforcement of parking regulations	BTD and Boston Police
	o	Peak period goods delivery restrictions	Department

- Promotion of the availability of monthly "T" passes on sale at the MBTA concourse, which directly connects Copley Place with the new Back Bay Orange Line/Commuter Rail station.

- Encourage employees to participate in carpooling programs with neighboring organizations and companies. The Proponent also intends to work with Caravan for Commuters, Inc. to establish vanpools among building tenants.

- If vanpools can be formed among building tenants, then reserved parking places in the on-site garage would be provided for vanpool use.

- For employees able to commute via bicycle, provision of a convenient and secure bicycle storage area at no charge.

- Employers will be encouraged to utilize a flex-time or staggered work hour system to reduce peak hour traffic impacts through provision of longer building hours (8:00 AM to 6:00 PM).

- A contact person will be designated in the building management office to coordinate transportation management efforts and provide information as required by public inquiries.

TRAFFIC OPERATIONS

Several modifications in traffic operation and control have the potential to improve traffic flow and level of service. These include measures to alleviate specific problems at selected intersections as well as more general improvements to larger street segments. Implementation of these measures falls within the jurisdiction of the City of Boston Transportation Department.

Intersection-Related Measures

A series of low-cost measures to improve flow at some of the more critical study area intersections are described in the following paragraphs. These include the removal of parking spaces on the critical approaches to intersections, enforcement of existing parking restrictions and changes to the phasing of traffic signals.

The St. Botolph Street/Massachusetts Avenue intersection is expected to operate at Level of Service "E" during the morning and evening peak hours, primarily as a result of delays for northbound vehicles on Massachusetts Avenue in both peak periods and for westbound vehicles on St. Botolph Street in the PM peak hour. Removal of approximately 100 feet of parking (five to seven spaces) on the northbound approach of Massachusetts Avenue and the permitting of right turns on red, in combination with a PM peak hour parking prohibition removing five to seven spaces on the westbound approach to St. Botolph Street would improve the intersection LOS to "C" during both peak periods.

During the PM peak, the intersection of Columbus Avenue and Massachusetts Avenue is predicted to continue to operate at LOS "F" with average motorist delays of over two minutes under the Build condition. One cause of this problem is the presence of parking on Massachusetts Avenue between the new Orange Line Station (located approximately 300 feet southeast of St. Botolph Street) and Columbus Avenue. Another major factor that significantly impedes the flow of traffic on this roadway is the amount of illegal and double parking on Massachusetts Avenue. Also, the amount of green time provided for Columbus Avenue traffic is too short given the magnitude of east-west traffic. Therefore, it is recommended that parking be removed from the western side of Massachusetts Avenue and that the signal timing to be adjusted to allow for more time on Columbus Avenue. With these improvements, average delay would increase to 39.5 seconds in the PM peak hour with an improvement from LOS "F" to LOS "D".

At the intersection of Columbus Avenue and Dartmouth Street, predicted to operate at LOS "F" during the morning peak hour in 1989, the narrow width of Dartmouth Street and the presence of a projected parking area precludes removal of parking on the northbound approach of Dartmouth Street in order to add a right-turn lane. Therefore, phasing improvements to Dartmouth Street approach would improve operations to LOS "E", a moderate improvement.

At the Boylston Street/Massachusetts Avenue intersection, delays to eastbound vehicles during the morning peak hour result in an LOS "F" condition for this approach. The overall intersection operates at LOS "C".

The relocation of the existing taxicab stand from Boylston Street to Massachusetts Avenue and the permitting of right turns on red from this approach would improve the operating level of service to "D".

It is also recommended that right turns on red be permitted on the southbound approach of West Newton Street at its intersection with Columbus Avenue along with phasing improvements. This would result in a improvement from the predicted LOS "F" conditions to an estimated LOS "B" condition.

Table IV A-31 presents a summary of the recommended traffic operations mitigation measures and their estimated impacts on delay and level of service.

To improve intersection operating conditions, the judicious application of localized peak period parking restrictions on all approaches to individual intersections for right or left-turn lanes should be given consideration. This is in addition to similar recommendations made earlier in the "Traffic Operations" subsection.

It should be noted that some of these improvements, particularly removing parking to provide additional travel lanes must be implemented carefully. In the case of parking, the primary concern is to provide adequate residential spaces in what is already a constrained condition. One alternative would be to convert some of the metered spaces to residential permit spaces only, or to allow parking on some of the minor streets where spaces are recommended to be available until 7:00 or 7:30 AM when the morning peak period begins.

Another more major option might be for the city to consider implementing a no parking, no stopping policy on Massachusetts Avenue similar to the program recently implemented on Congress, Arlington and Tremont Streets Downtown. There is no question that this would have a major effect on improving traffic flow, however a considerable number of residential parking spaces would be eliminated.

In response to the Secretary's comments on the Draft EIR, all of the traffic operation improvements proposed appear feasible and are all categorized as low cost and short term Transportation Systems Management (TSM)

TABLE IV A-31
Summary of Traffic Operations Mitigation Measures

Location	Time Period	Action	Without Improvement			With Improvement		
			Delay	LOS	V/C	Delay	LOS	V/C
St. Botolph Street/ Massachusetts Avenue	AM Peak Hour	Remove 100 feet of parking on Massachusetts Avenue-North-bound approach	51.9	E	0.79	16.6	C	0.66
	PM Peak Hour	Remove 100 feet of parking on Massachusetts Avenue-North-bound approach and the St. Botolph Street-Westbound approach	40.5	E	0.93	19.1	C	0.78
Columbus Avenue/ Massachusetts Avenue	PM Peak Hour	Increase Green Time on Columbus Avenue	NA	F	1.08	46.0	D	1.05
Columbus Avenue/ Dartmouth Street	PM Peak Hour	Adjust Phasing	NA	F	1.18	58.3	E	1.14
Boylston Street/ Massachusetts Avenue	AM Peak Hour	Relocate Taxi Stand Add Right-turn Capacity	24.3	C	0.85	17.2	C	0.81
Columbus Avenue/ West Newton Street	PM Peak Hour	Allow Right Turns on Red Adjust Phasing	NA	F	0.67	10.2	B	0.74

measures. Responsibility for these measures rests primarily with the Boston Transportation Department (BTD), with the support of the Proponent. These improvements can be implemented in a relatively short time and are primarily addressed at existing problems, not new problems created by this development. The Proponent's representatives have met with BTD staff regarding the proposed improvements. More discussions on some of the proposals, particularly those which require removal of parking will be closely scrutinized by the BTD. The Transportion Access Plan to be prepared by the Proponent and submitted to the BTD and BRA will include the results of detailed reviews on each improvement proposal and will indicate the City's willingness to implement each measure. The Proponent intends to work in a cooperative fashion with the City and the community to see that implementation occurs.

PARKING CHANGES

The Project Proponent has proposed to neighborhood residents the option of allowing neighborhood usage of 20 to 30 spaces of the proposed parking facility during nighttime and weekend hours, a measure which would partially alleviate the aforementioned residential parking problem. This will be subject to negotiations between residents and the developer in the future.

INSTITUTIONAL ADJUSTMENTS AND OTHER MITIGATION MEASURES

In response to concerns raised by neighborhood residents at Project meetings, the following additional measures are recommended for consideration to improve the transportation environment in the study area.

Pedestrian Crossings

To alleviate the previously identified pedestrian crossing deficiencies along Huntington Avenue, it is recommended that all pedestrian signals be carefully inspected. Where appropriate, timing changes should be considered. The Proponent will again work closely with the BTD on this issue in order to facilitate safe and orderly pedestrian flow.

Double Parking on Huntington Avenue

To alleviate this problem with respect to the Marriott Hotel, it is recommended that the three metered parking spaces in front of the Project site be removed and the entire frontage be converted to a taxi stand. The current cab stand between Harcourt Street and the Marriott driveway should be relocated to this point. In front of the Greenhouse and the Colonnade Hotel, where double parking is prevalent, existing parking regulations should be enforced and the cooperation of the building management for both of these developments should be sought.

Bus Idling on Huntington Avenue

Tour buses which park in the area should be restricted to the far right lane on the westbound side of Huntington Avenue only. Through the management of all area hotels and the Christian Science Center drivers should be asked to turn off their engines if they are to be parked for an extended time period. This will help alleviate resident concerns about diesel emissions and noise.

Vehicles Crossing the Harcourt Street Island

The Harcourt Street barrier was originally constructed according to the specifications of the Boston Fire Department. It was designed as a pedestrian area capable of accommodating fire engines and emergency vehicles crossing the barrier during an emergency. While the barrier is generally effective, some vehicles do drive over it to reach St. Botolph Street. The Proponent recognizes the concerns of the community regarding traffic using this path and is currently working with the Boston Fire Department to develop an improved solution which would further discourage illegal use of the barrier. Under consideration are increasing the height of the curb to make it more difficult and uncomfortable to drive over and installing additional signage to emphasize the prohibition.

Truck Traffic on St. Botolph Street

Trucks with loads greater than two and one-half tons should be restricted from using St. Botolph Street except for making local deliveries. With the location

of the loading dock on Harcourt Street, trucks traveling to the project site will be required to use Massachusetts Avenue to access Huntington Avenue to Harcourt Street and will not use St. Botolph Street or other neighborhood streets.

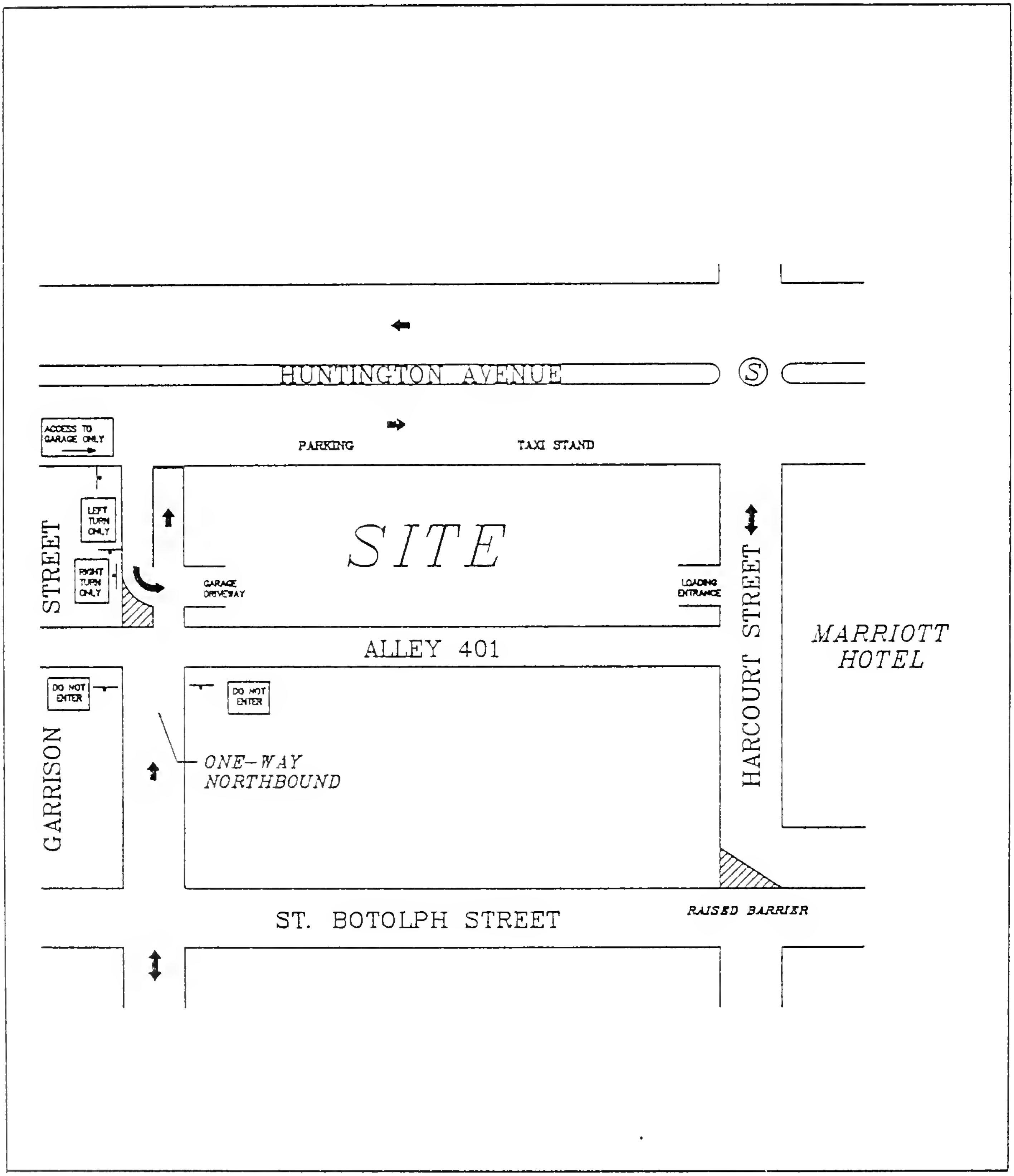
Vehicle Through Traffic on St. Botolph Street

If the local roadway system remains unchanged, it is estimated that 23 AM peak hour and 33 PM peak hour vehicles will utilize St. Botolph Street and Garrison Street to enter and exit from the Project parking garage, respectively. While this represents a small increase over the existing traffic currently using Garrison Street as a shortcut to Huntington Avenue, the Proponent does not desire to see project traffic utilize St. Botolph Street.

As previously described in the discussion of the access driveway location, there are several available means to reduce the level of through traffic on St. Botolph Street. Six different options were reviewed and presented in this FEIR. Most of the alternatives provide some relief to the community, however each has advantages and disadvantages. These alternative street direction modifications are subject to review and implementation by the City of Boston Transportation Department. While this Final EIR provides considerable information regarding the advantages and disadvantages of such a change, these alternatives should be carefully considered by neighborhood residents as they have both positive and negative effects on traffic circulation, and convenience. The Proponent supports efforts by the neighborhood and the City of Boston to implement measures to restrict through traffic from using neighborhood streets. The proponent has no desire to add traffic on St. Botolph Street and will work cooperatively with the City and the community to develop a mutually agreeable solution. In addition the Proponent will encourage its tenants to utilize Huntington Avenue as the access and egress route from its garage, regardless of its entrance location.

One traffic restriction described previously as Alternative One would be to change Garrison Street to one-way northbound between St. Botolph Street and Alley 401, immediately behind the site. A conceptual illustration of this option is presented in Exhibit IV A-14.

EXHIBIT IV A-14
Proposed Modifications To Garrison Street



Many of these recommendations will take continued City and community discussions to determine the desirability of their implementation.

Delivery Vehicles

A series of specific mitigation measures regarding delivery vehicles have been identified by the Proponent. Similar measures have recently been agreed to by other projects in Downtown Boston, most notably at the 125 Summer Street development. The Proponent is committed to these measures which will be made part of the City's Access plan.

- In order to minimize the impacts of delivery traffic on Harcourt Street and Copley Place operations, tenant deliveries (with the exception of courier services) will be coordinated between the two buildings and efforts will be made to restrict deliveries to off-peak hours.

- Major tenant deliveries (which typically require the moving of furniture, etc.) will be restricted to before 7:00 AM or after 6:00 PM.

- Because the building will be open 24 hours a day, off-hour deliveries will be accepted at the loading dock.

- Deliveries by tractor-trailer vehicles will be restricted.

- No deliveries will be accepted through the main entrances to the building but will be restricted to the loading dock.

- For couriers, collection boxes for the major courier services (Federal Express, Purolator, etc.) will be located convenient to the loading dock. Dropoffs/pickups will not be accepted at other locations, thereby minimizing impact on street traffic. Use of the small post office at Copley Place will also be encouraged.

PARKING CHANGES

Perhaps the most effective mitigation measure involve the analysis assumption that all those desiring to access the Proposed Project via automobile would find a parking space at their destination, i.e., an "unconstrained" approach. In reality, due to physical space limitations and policy decisions on the amount and type of parking that is appropriate for the Project in particular and the area in general, such will not be the case. The demand/supply estimates indicate a shortfall of 137 long-term (all-day commuter) spaces. It is expected that a significant portion of this excess auto demand will shift to a non-automobile mode, such as public transportation. Another alternative is increased vehicle occupancy via carpooling or vanpooling. In either case, the actual on-street auto demand will likely be less than projected. While a nominal improvement in levels of traffic service can be anticipated as a result of this demand reduction, the reduced pressures on the parking system would be significant.

ACCESS PLANS

The Proponent is aware of the obligation to prepare a Transportation Access Plan for submission and review by the Boston Transportation Department and the Boston Redevelopment Authority. Many of the issues discussed in this document will appear in the access plan and the Proponent will be required to address numerous City issues, including the creation of access goals and monitoring project impacts. The Proponent will also continue to work with the City to address the issue of short-term parking within the project, as requested in a comment on the Draft EIR by the BTD.

INTRODUCTION

This section addresses visual quality and urban design issues associated with the construction of either the Proposed Project or Low-Build Alternative. Also included in this section is a discussion of the relationship of project development to current and proposed public approval processes.

Specifically, the chapter includes the following:

- A description of the urban design context immediately adjacent to the site and within the surrounding area.

- A description of the design and programmatic objectives which led to the formulation of the massing of the Proposed Project and the Low-Build Alternative.

- A discussion of how the Project relates to its regulatory context, specifically focusing on current zoning, the anticipated Interim Planning Overlay District, and the Public Improvement Commission approval required for the proposed pedestrian arcade.

- A summary of the urban design and visual quality effects of the Proposed Project and Low-Build Alternative in terms of both the site's Huntington Avenue and St. Botolph Street contexts.

The discussion presented in this section includes review of the analysis presented in the Draft EIR, response to the Secretary of Environmental Affairs' Certificate on the Draft EIR, and response to other comments received from public agencies and interested parties.

URBAN DESIGN CONTEXT

An important aspect of the visual analysis for the 116 Huntington Avenue project is the project's relationship to the surrounding urban context and aesthetic features of the various types of development that exist in the project's vicinity. The 116 Huntington Avenue site is situated within an urban setting of contrasting elements ranging from low-rise 19th century buildings along quiet neighborhood streets to modern high-rise buildings within open monumental sites. The following analysis is based on the premise that any development of the project site should respond to these varying urban environments.

SURROUNDING CONTEXT

The project site fronts on Huntington Avenue, a major transportation corridor leading from Copley Square in Boston's Back Bay to Massachusetts Route 9, which extends through the city to the western suburbs and beyond. The Huntington Avenue corridor in the vicinity of the project site is characterized by large-scale development, constructed since the 1960s when many of the area's turn-of-the-century buildings were cleared. Development along the Huntington Avenue corridor in the project area includes Copley Place, the Prudential Center, the Christian Science Center, the Colonnade Hotel, the Greenhouse Apartments, and the Midtown Motor Inn.

Copley Place, the major development located east of the site, is a 3.5 million square-foot mixed-use development constructed in the early 1980s over the Massachusetts Turnpike. Copley Place includes retail, office, hotel, residential, and parking facilities. Components of the complex are unified through the consistent use of light-colored pre-cast concrete cladding and are linked by a large interior retail gallery. These components vary in height and massing and include the 385-foot Marriott Hotel, directly adjacent to the project site, the 403-foot Westin Hotel, and lower-rise central base elements.

Across from the project site, between Huntington Avenue and Boylston Street, is the Prudential Center. Constructed in the 1960s, this complex is comprised of a number of large freestanding buildings, many in the range of 100 to 300 feet in height, located around the Prudential Insurance Company Building. At 52 stories, the Prudential Insurance Company Building is a well-known Boston landmark which is exceeded in height only by the John Hancock Tower further to the east. Among the major structures in the Prudential Center complex are the three Prudential Center apartment towers, the 301 Huntington Avenue office building, the Saks Fifth Avenue and Lord and Taylor department stores, the Sheraton Boston Hotel, and the John B. Hynes Auditorium which is currently under renovation and reconstruction. The Prudential Center also includes a number of large open plazas and underground parking areas.

Further west along Huntington Avenue is the monumental Christian Science complex that includes several large church-related buildings and an expanse of public open space. In addition to the main church--a granite Romanesque style structure with a large Classical Revival addition, the complex includes several modern-style structures composed of limestone-colored concrete. These include a long colonnade fronted building and a 28-story administration building which acts as the vertical focus of the complex. The plaza area of the complex features a 700-foot reflecting pool and a tree-lined promenade.

The St. Botolph neighborhood is located just south of the project site. It is a primarily residential area comprised of intact late 19th century Victorian buildings. Red brick and brownstone rowhouses, three to four stories in height, characterize the neighborhood, although heights in the area range from two to twelve stories. Among the elements which establish the area as a visually cohesive district are uniform setbacks, bowfronts, arched entrances, and a range of detail and architectural elements. Roof types vary, including Mansard, turretted, stepped, and flat structures.

Although the area is primarily residential, several non-residential buildings are also located within the district. These include the St. Botolph Restaurant, the Musicians Union Building, and 9-11 Harcourt Street which is the location of the Harcourt Book Bindery and the Connick Associates stained glass studio.

Most structures in the neighborhood were constructed in the late 1880s and are generally in good to excellent condition, due largely to the efforts of area residents who have been active in renovation and restoration which has preserved the neighborhood's architectural character.

In recognition of the architectural resources in the St. Botolph Street area, the General Court has designated it as an Architectural Conservation Area, and the U.S. Department of the Interior has determined it to be eligible for the National Register of Historic Places.

SITE CONTEXT

The project site is currently vacant, and is used for surface parking of approximately 48 cars. The site faces modern, large-scale development on three sides, and smaller-scale turn-of-the-century development on its fourth side.

To the east of the site, across Harcourt Street, is the 385-foot Marriott Hotel, part of the recently completed Copley Place mixed-use development. The hotel tower is clad in pre-cast concrete, and rises 33 stories above a five-story base element.

To the west of the site, across Garrison Street, is the ten-story (110 foot) Colonnade Hotel, built in the early 1970s. The building was constructed using exposed reinforced concrete columns which extend from the sidewalk to the roof line.

To the north of the site is Huntington Avenue, a major arterial roadway leading west from downtown Boston. Across Huntington Avenue from the site is the 101 Huntington Avenue building. Built in 1970 as part of the Prudential Center development, the 308-foot office tower is clad in glass and masonry material, and is often referred to as the "Mini-Pru" due to its proportional resemblance to the taller Prudential Building located nearby.

To the south of the project site, across Alley 401, is the seven-story (80 foot) Garrison Hall, which was constructed at the turn-of-the-century as an apartment building, and which continues in residential use today. The building is Classical Revival in style, and is constructed of light-colored stone. The facade of Garrison Hall is decorative on its two sides which face Garrison Street and St. Botolph Street. However, its other two elevations, including that which faces the project site, are clad in brick and are relatively plain. Although Garrison Hall is larger than most other buildings along St. Botolph Street, it represents a different scale and character than the modern development which surrounds the project site on its other three sides.

BUILDING PROGRAM AND MASSING

INTRODUCTION

In Chapter III of the Draft EIR and of this Final EIR, the two alternatives analyzed in this EIR process are described and shown in elevation. The evolution of these two alternatives is also described, beginning with the filing of an Environmental Notification Form (ENF) for the 116 Huntington Avenue Project in 1985 that proposed a 31-story structure. In response to the Draft EIR, several comments requested further information concerning the programming and design objectives which led to the massing of the Proposed Project and of the Low-Build Alternative. The following section addresses these comments, detailing the programmatic and design concepts that resulted in the formulation of these two alternatives.

116 HUNTINGTON AVENUE PROJECT

As described in the Draft EIR, the program of the Proposed Project is as follows:

o	Office Area	271,500 gross s.f. (Includes Lobby)
o	Retail Area	6,500 gross s.f.
o	Parking	Approx. 94 spaces

Since there are a number of methods for calculating gross square footage, the gross square footage figures used here may differ somewhat from gross floor area as calculated pursuant to the Boston Zoning Code.

The principal programmatic objective governing this proposal is to create an office building which satisfies the additional space needs of existing office tenants at Copley Place. The building must also be economically practical and produce sufficient revenue to justify the use of high quality materials and elaborate design articulation on the building's facade. Having initially proposed a 31-story structure, and having subsequently proposed a 21-story structure of 300,000 s.f., the currently proposed

16-story, 278,000 s.f. building represents the smallest program which the Proponent feels satisfies these goals (see Table IV B-1).

In addition, the program of the retail component of the project is intended to provide sufficient retail activity to animate the Huntington Avenue streetscape, where the project's arcade has been designed to add interest to the pedestrian experience. Also, a principal objective in creating the pedestrian arcade is the establishment of a sufficient floorplate to allow the creation of practical and economical office space within the extremely narrow site. This increase in floor area facilitated by the arcade makes it possible to accomplish the program objectives within a 200 foot building. Table IV B-1 outlines the space provided on each floor of the Proposed Project.

As described in the Draft EIR, the project will stand 200 feet to the top of the highest habitable floor (215 feet including mechanical space), and will have a floor-area ratio (FAR) of 13.9. In order to respond to the surrounding context, the building steps down in increments which relate to the heights of neighboring buildings. Due to the creation of such setbacks, the building program is subtantially less than what could be obtained in a 200-foot building using a more conventional massing approach.

The massing of the building has also been divided into two vertical elements in order to relate it to the strongly vertical Marriott Hotel tower. This approach also serves to visually break up the overall bulk of the structure and provide a massing which is more compatible with that of smaller-scale buildings.

In addition to being divided vertically, the proposed building is divided horizontally into a base, middle, and top. This design measure further reduces the bulk of the structure and contributes to making it compatible with nearby smaller-scale development.

The base portion of the building stands five stories and is defined by a projecting cornice. The horizontal element established by this portion of the building is intended to reinforce a relationship to its Huntington Avenue context by corresponding to the Marriott Hotel base. Included in this portion of the building is the

TABLE IV B-1
Area Calculations: Proposed Project*

Floor	Office Space USF**	Retail Space	Lobby, Core Service Mech & Parking	Totals
PARKING III			20,928	(44 CARS)
PARKING II			20,928	(32 CARS)
PARKING I			20,928	(18 CARS)
Sub Total			62,784	62,784
1st Floor		5,573	8,757	14,330
2nd Floor	15,906		2,638	18,544
3rd Floor	17,306		2,638	19,944
4th Floor	17,306		2,638	19,944
5th Floor	17,306		2,638	19,944
6th Floor	14,704		2,638	17,342
7th Floor	14,704		2,638	17,342
8th Floor	14,824		2,638	17,462
9th Floor	14,514		2,638	17,152
10th Floor	14,514		2,638	17,152
11th Floor	14,514		2,638	17,152
12th Floor	14,564		2,588	17,152
13th Floor	14,564		2,588	17,152
14th Floor	14,564		2,588	17,152
15th Floor	13,150		2,588	15,738
16th Floor	12,720		2,588	15,308
Penthouse (mechanical)			5,000	5,000
GRAND TOTAL	225,160	5,573	115,861	346,594***

* Areas have been calculated to include outside of walls.
** Useable sq. ft.
*** Includes parking area and penthouse mechanical.

previously described pedestrian arcade along Huntington Avenue. In response to comments on the Draft EIR requesting additional visual depiction of the arcade, Exhibits IV B-2 and IV B-3 show the arcade in perspective from Huntington Avenue, and in elevation from Garrison Street.

The proposed arcade will consist of one and two-story spaces and will only be 13 feet deep so that natural light is maximized. As previously mentioned, the arcade extends along the building's Huntington Avenue side, which will largely be shaded by the building itself with or without the arcade structure. The building side of the arcade will be glass, providing views into the lobby and retail spaces. In order to ensure an attractive pedestrian environment within the arcade, the proposed design will utilize extensive architectural details in its paving, column, ceiling, and storefront elements. Paving materials in the arcade will be brick with granite dividing strips. Column bases will be constructed in granite. The ceiling design will include arches and coffers.

The middle portion of the building is divided into two vertical elements and is characterized by bay and bow windows. The top of the building is defined by a decorative "crown" element.

LOW BUILD ALTERNATIVE

As described in the Draft EIR, the program of the Low-Build Alternative is as follows:

o Office Area	210,000 gross s.f. (Includes lobby)
o Retail Area	6,000 gross s.f.
o Parking	Undetermined

This building program represents the largest amount of building space which the Proponent feels can reasonably be incorporated in the building, given the same basic design approach utilized in the Proposed Project, and given the building's 12-story height, based on the Secretary of Environmental Affairs' request for an evaluation of a 12-14 story alternative.

Because the 12-story height of this building represents a paramenter imposed for purposes of assessing urban design effects in this EIR, its resulting program has not been formulated to represent an amount of building space which the Proponent feels can necessarily justify its construction in economic terms. However, in order for the massing of this building to represent a realistic design approach, the Proponent has attempted to maximize the program of this alternative just as a developer would do if this building were actually being proposed. In this way, the building's massing has been developed to reflect not just an urban design exercise, but an attempt to responsibly maximize program given this theoretical height constraint. As noted earlier for the Proposed Project, a more conventional "box" massing approach would make possible a substantial increase in program area as compared to this Low-Build Alternative.

One of the principal massing characteristics which resulted from this study was the location of the building's first setback at the 10th floor height corresponding to the adjacent Colonnade Hotel, rather than at the lower height corresponding to Garrison Hall. By doing this, the Low-Build Alternative is able to accommodate approximately an additional 11,000 s.f. of office space (four floors @ 2,790 s.f. per floor) as compared to the same building with a setback at the height of the setback utilized in the Proposed Project. This alternative also includes the pedestrian arcade, as described in the previous section (see Exhibits IV B-2, IV B-3). A detailed floor-by-floor summary of the program of the Low-Build Alternative is provided in Table IV B-2.

The height of the Low-Build Alternative is 152 feet to the top of the highest habitable floor. At this height, the building is too low to be broken into two separate towers, as was the case for the Proposed Project. Rather than being expressed as two vertical elements, the Low-Build Alternative has been designed as a more horizontally oriented structure.

TABLE IV B-2
Area Calculations: Low-Build Alternative*

Floor	Office Space USF*	Retail Space	Lobby, Core Service Mech & Parking	Totals
PARKING III			20,928	(44 CARS)
PARKING II			20,928	(32 CARS)
PARKING I			20,928	(18 CARS)
Sub Total			62,784	62,784
1st Floor		5,573	8,088	13,661
2nd Floor	15,237		2,638	17,875
3rd Floor	16,577		2,638	19,215
4th Floor	16,577		2,638	19,215
5th Floor	16,577		2,638	19,215
6th Floor	16,577		2,638	19,215
7th Floor	16,577		2,638	19,215
8th Floor	16,577		2,638	19,215
9th Floor	16,577		2,638	19,215
10th Floor	13,557		2,638	16,195
11th Floor	13,557		2,638	16,195
12th Floor	13,607		2,588	16,195
Penthouse (Mechanical)			5,000	5,000
GRAND TOTAL	171,997	5,573	104,840	282,410***

* Areas have been calculated to include outside of walls.
** Useable sq. ft.
*** Includes parking and penthouse mechanical.

Like the Proposed Project, the Low-Build Alternative is organized into facade components that result in a base, middle and top. Because the building is a lower, more horizontally oriented structure, its base element is less clearly articulated as a separate building feature.

In the middle section of the building, three bow window elements are utilized, extending from the third through the twelfth floors. The bow windows are interrupted at the 6th floor by a band of flush windows on all elevations of the building. This feature is intended to relate to the cornice of Garrison Hall, and to the base element of the Marriott Hotel. The top of this building will consist of a decorative "crown" treatment similar to that of the Proposed Project.

REGULATORY CONTEXT

INTRODUCTION

In the Draft EIR for the 116 Huntington Avenue Project, the following four city planning policy documents were described:

- The Boston Zoning Code (1956),
- 1965/1975 General Plan for the City of Boston,
- The Fenway Urban Renewal Plan (1965), and
- Downtown Zoning: Interim Planning Overlay District (Draft, 1987).

These documents were discussed in regard to the project site in order to characterize the planning context in which project development will occur. In response to the Draft EIR, several comments were received which requested further information concerning the relationship of the project to current zoning and to the anticipated Interim Planning Overlay District (IPOD) affecting the project area. The following section addresses these comments and describes the planned project approval process in regard to zoning, the IPOD, and other related requirements.

ZONING

The land on which the Project will be constructed will be leased to the Proponent by the Massachusetts Turnpike Authority (MTA) as part of the existing Copley Place air-rights lease. Because the Project will be located on land owned by the MTA, it is not subject to the Boston Zoning Code. Nonetheless, the Proponent intends to comply with the goals and objectives of that code.

Zoning in the area of the 116 Huntington Avenue Project is B-2, allowing for retail businesses and offices to be built on-site. It prescribes a maximum Floor Area Ratio (FAR) of 2. There is no height limitation stated in the Zoning Code.

It is anticipated that the Project site will receive an Urban Renewal ("U") overlay subdistrict zoning designation. "U" subdistricts may be established upon application to the BRA for land in any district which is subject to an agreement with the BRA establishing use and dimensional controls as specified in a land assembly and redevelopment plan, or in an urban renewal plan.

Since the project is located within the Fenway Urban Renewal Area, it qualifies for a "U" subdistrict designation. As discussed in the Draft EIR, the Fenway Urban Renewal Plan, as issued in 1965 and subsequently amended, outlines general development policies for the project area, and identifies general goals including elimination of blight and realization of the area's potential for new housing and commercial facilities.

A "U" designation would require the Proponent to enter into a Land Disposition Agreement (LDA) with the BRA. Once an LDA is entered into, a "U" sub- district could be established by vote of the Boston Zoning Commission.

The dimensional requirements, except FAR, of the Boston Zoning Code do not apply to "U" subdistricts. Other requirements of the Code would continue to apply. Exceptions from these requirements can be granted by the Board of Appeal pursuant to Article 6A of the Code, which lists criteria for granting an exception.

INTERIM PLANNING OVERLAY DISTRICT REGULATIONS

The Boston Redevelopment Authority is considering making a request to the Boston Zoning Commission that an IPOD be imposed on most of downtown Boston, including the site of the Proposed Project. As of this date, the IPOD has not yet been recommended for approval by the BRA nor approved by the Boston Zoning Commission. If adopted as currently drafted, the IPOD would place a substantial portion of the city (including the site of the Proposed Project) in a Medium Growth Subdistrict. The height standards in a Medium Growth Subdistrict would be 125 feet as of right, and 155 feet if the following conditions were met:

A. The height and massing of the project were consistent with that of structures in the surrounding subdistrict,

B. The proposed project were architecturally compatible with the surrounding subdistrict, and

C. The public benefits of the proposed project outweighed any burdens imposed.

Both the Proposed Project at 200 feet (16-story) and the Low-Build Alternative at 152 feet (12-story) meet these three standards. The structures in the surrounding subdistrict include the Marriott Hotel (385-feet), the Colonnade Hotel (110-feet) and the Prudential Center. The height and massing of both the Proposed Project and the Low-Build Alternative are consistent with that of these neighboring structures. The Board of Appeal would not look to the height of buildings in adjacent subdistricts to determine compliance with these three tests. Accordingly, since the St. Botolph residential neighborhood adjacent to the site is not within the Medium Growth Subdistrict, the height of such buildings would not be a determining factor if the IPOD were applicable.

The height standards in the IPOD are only standards, not limits. While they may be appropriate for some sites in the Medium Growth Subdistrict, they are not necessarily appropriate for all sites in the subdistrict. The main purpose of the standards is to offer some certainty to land owners as to what heights will be permitted in the Subdistrict without excessive

scrutiny, reserving to the Board of Appeal the right to grant an Interim Planning Permit to any project which is substantially consistent with the requirements of the IPOD.

It is anticipated that the Downtown IPOD proposal will exempt developments which are already in zoning review and have received substantial BRA design review, and that this exemption will apply to the Proposed Project. As a result, it is not expected that the project will require an Interim Planning Permit.

PUBLIC IMPROVEMENT COMMISSION APPROVAL

As previously described, the Proposed Project will include a sidewalk arcade along the Huntington Avenue side of the site. Among the principal objectives of the arcade is to maximize the amount of building program provided at lower levels of the structure, thus minimizing the need for height. The arcade has been designed to utilize high quality masonry and metal materials, and to utilize elaborate detailing in order to establish a high quality at-grade pedestrian environment. The arcade is expected to reduce wind and to provide shelter from precipitation. Minimal direct sunlight will be blocked by the arcade, due to the fact that its depth is 13 feet and the Huntington Avenue side of the building will be in shade for much of the day even without the arcade (see Draft EIR Chapter IV E, Shadow).

The portion of the Proposed Project located above and below the arcade will require a discontinuance granted by the Public Improvement Commission of the City of Boston. This discontinuance is required for construction of any structure above or below a public sidewalk.

Construction plans submitted to the Commission, as part of the discontinuance process, will include an engineering report detailing property lines, listing any utilities to be affected, and describing the physical characteristics involved in the construction. As part of the discontinuance process, the proposed arcade will be reviewed by a variety of city agency representatives, including staff of the Boston Public Works Department, Fire Department, Transportation Department, Boston Water and Sewer Commission, the Massachusetts

Bay Transportation Authority and other interested parties. Proposed plans would then be presented at a Public Improvement Commission meeting, and voted on.

PROBABLE PROJECT IMPACTS

INTRODUCTION

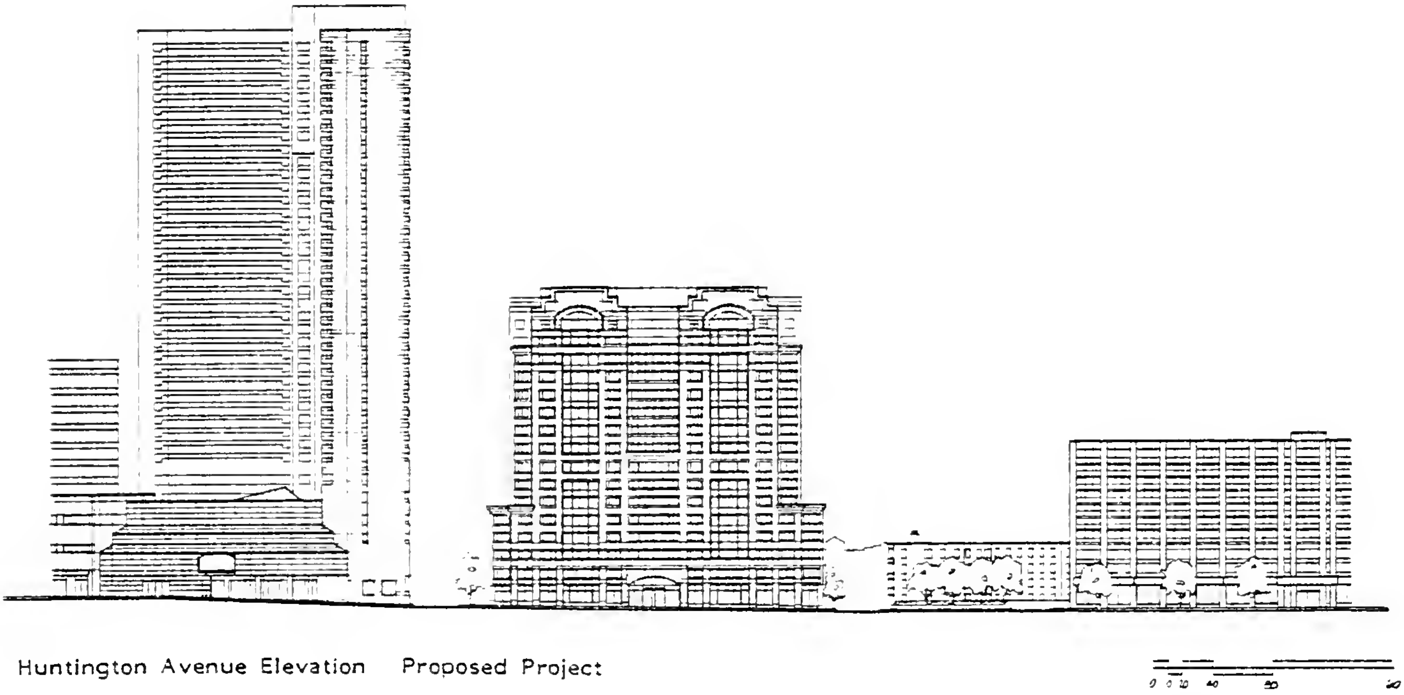
As discussed previously in this chapter, both the Proposed Project and Low-Build Alternative have been designed to relate to the varying components of the urban environment that surround the project site, which range from 4-story 19th century masonry rowhouses to high-rise late 20th century buildings such as the Prudential Tower.

In the Draft EIR, discussion of project impacts focused on a visual analysis of both build alternatives as seen from seven views within the project's vicinity.

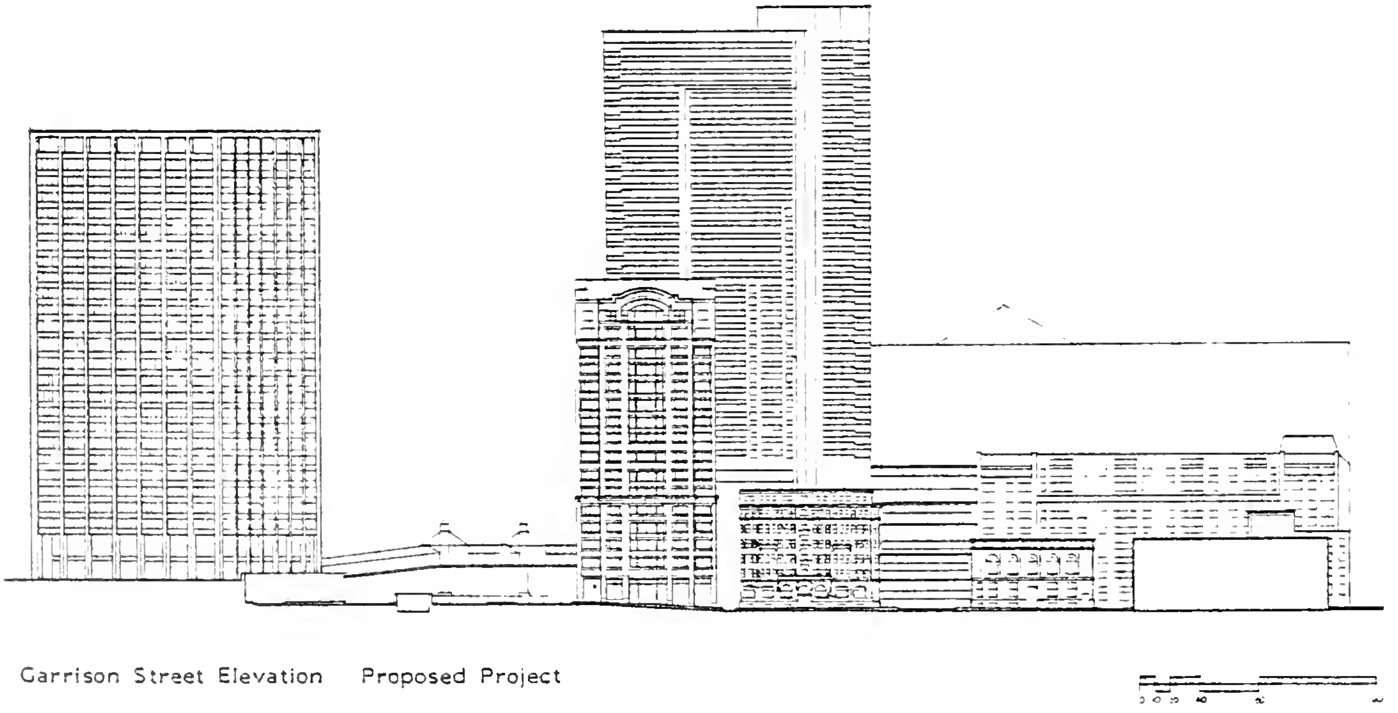
In summary, the study found that the scale of the Proposed Project appeared compatible with current development along Huntington Avenue. The effect of introducing the Proposed Project into an area at the periphery of the lower-rise St. Botolph district was found to result in minimal visual impact, given the existence of substantial high-rise development nearby, and given the incorporation into the project of appropriate mitigation measures involving massing, facade materials, and facade articulation. The study indicated that the Low-Build Alternative was less compatible with high-rise development along Huntington Avenue, but was also less visible as seen from St. Botolph Street.

In response to the Secretary of Environmental Affairs comments as well as those of other interested parties, this portion of the Final EIR analyzes in greater detail the relationship and impact of both build alternatives to the predominantly high-rise Huntington Avenue corridor and the smaller scaled St. Botolph neighborhood. The analysis addresses project impacts in relation to scale, massing, and building materials.

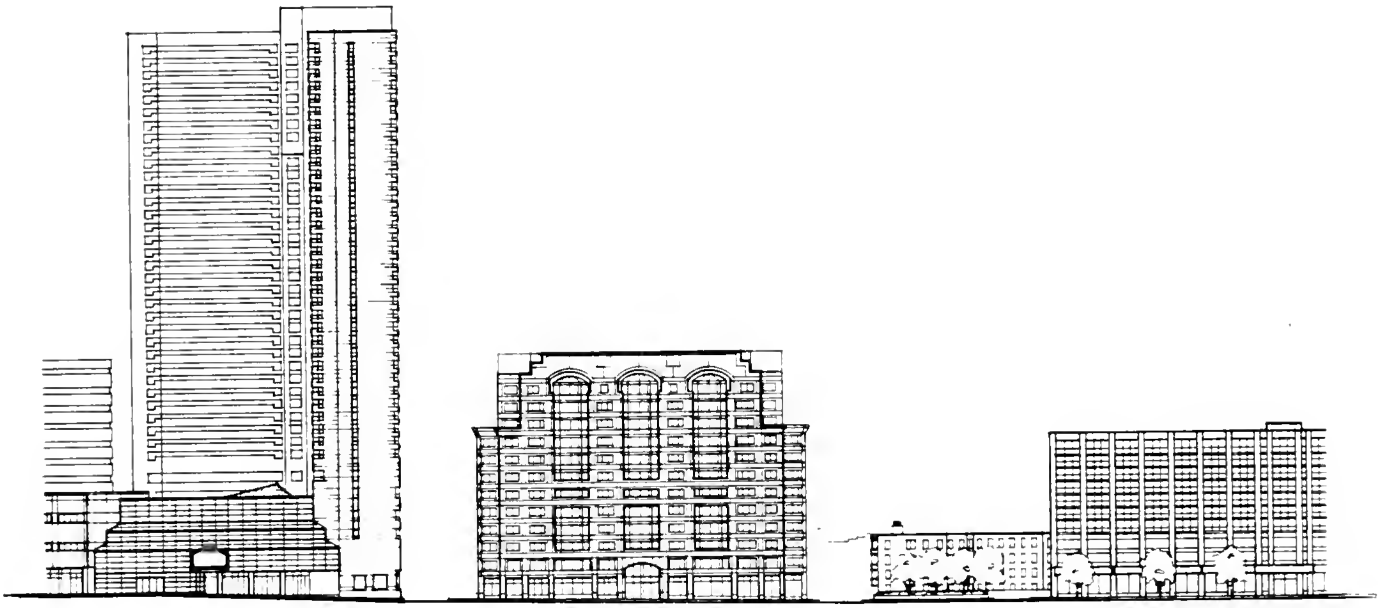
EXHIBIT IV B-1
Street Elevations



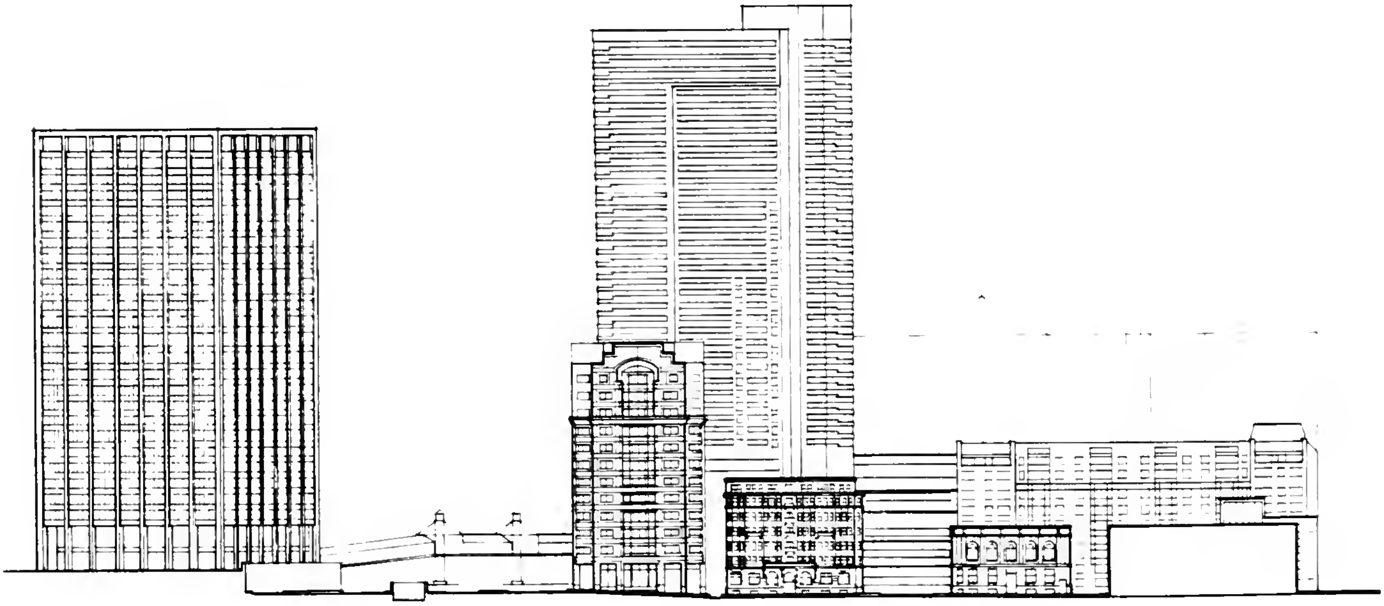
Huntington Avenue Elevation   Proposed Project



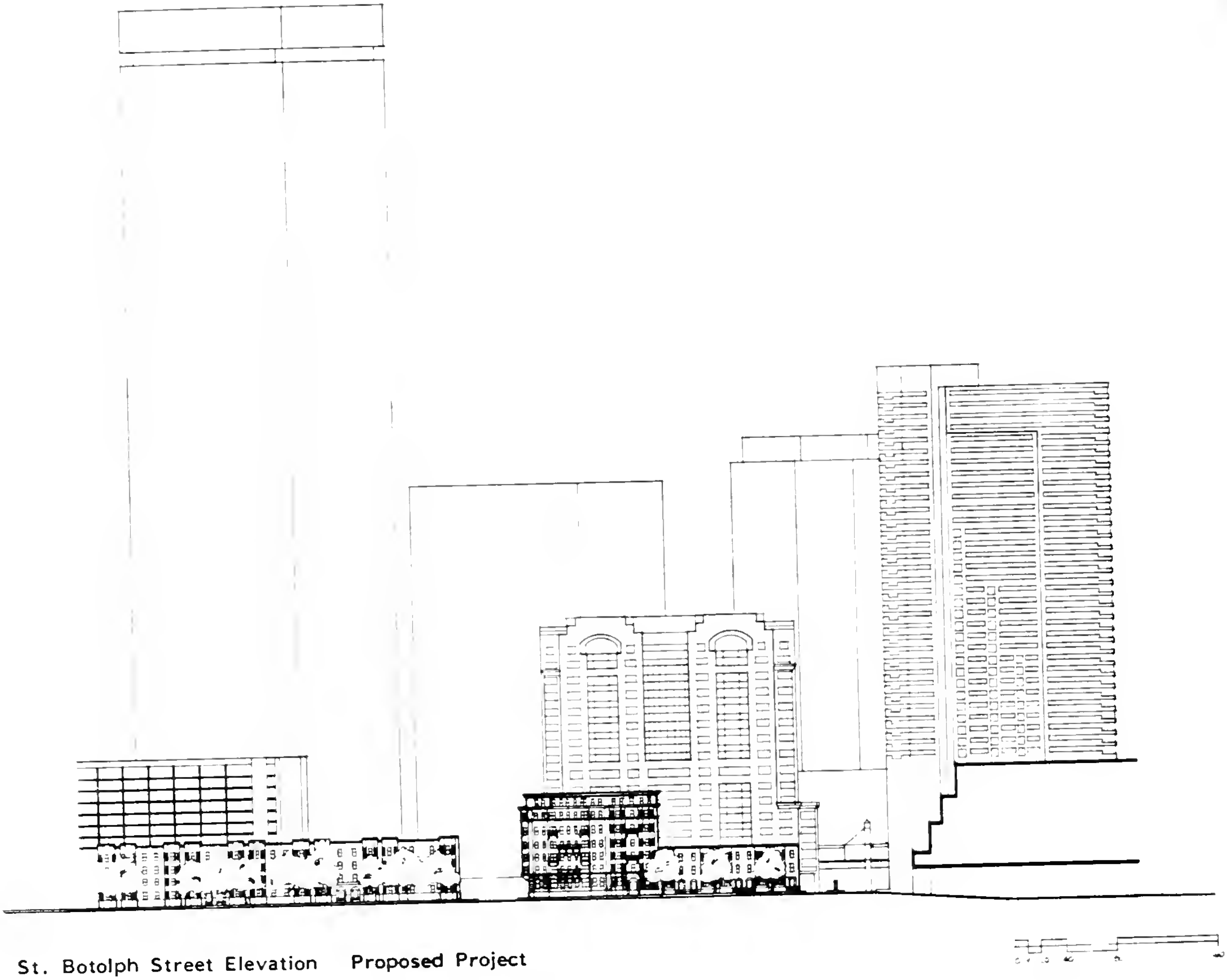
Garrison Street Elevation   Proposed Project



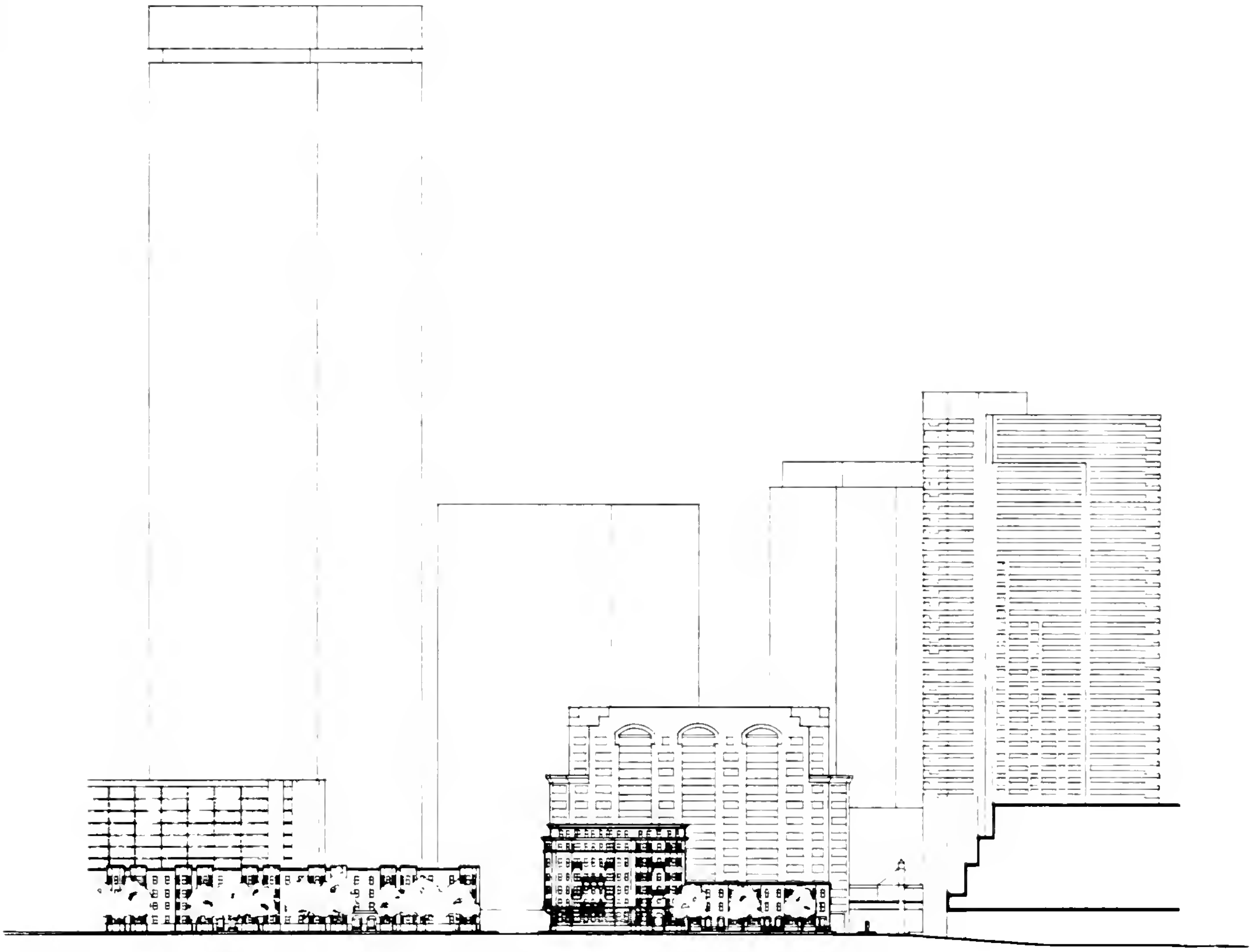
Huntington Avenue Elevation   Low Build Alternative



Garrison Street Elevation   Low Build Alternative



St. Botolph Street Elevation   Proposed Project



St. Botolph Street Elevation Low Build Alternative

EXHIBIT IV B-2
Pedestrian Arcade - Huntington Avenue Perspective

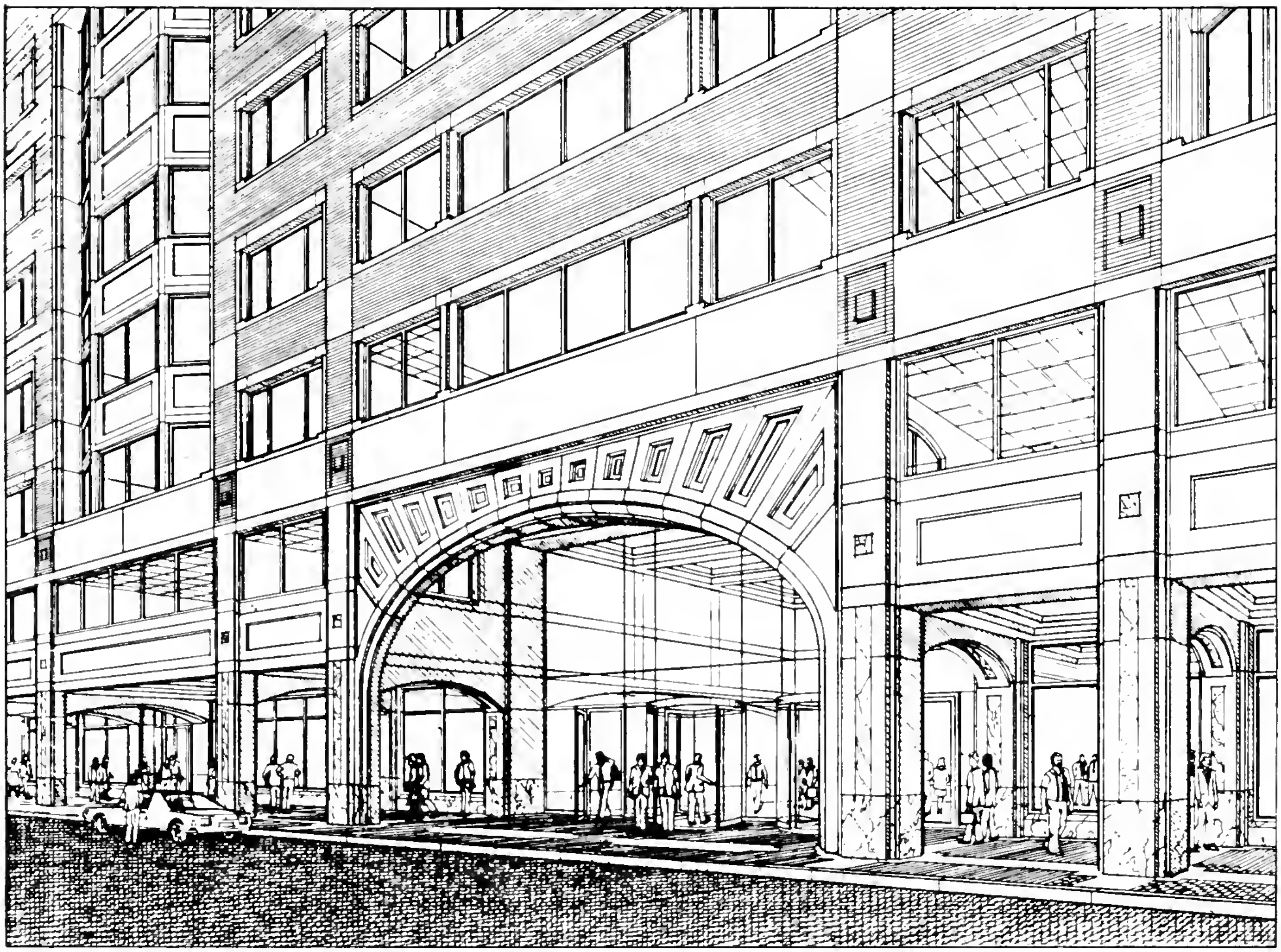
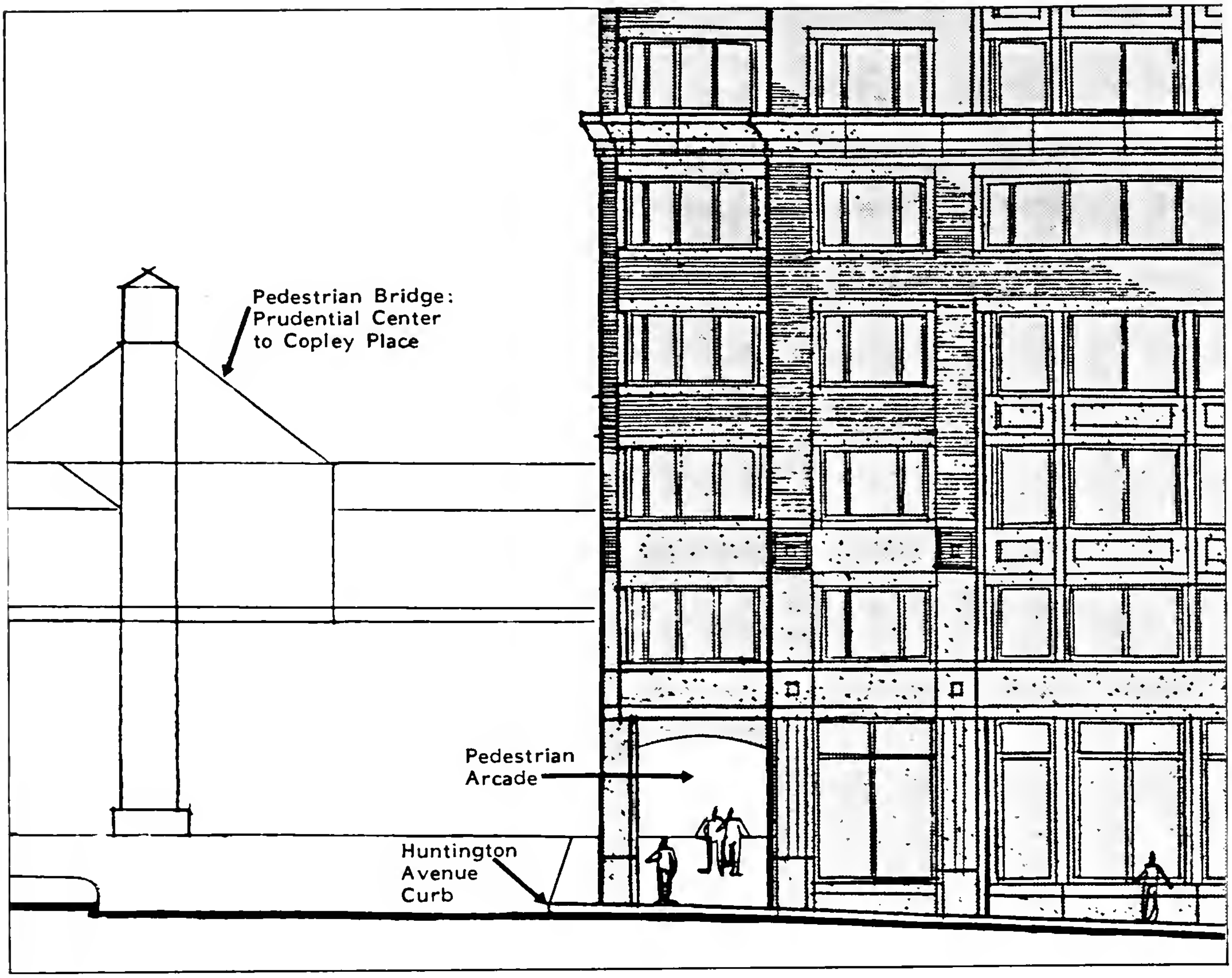


EXHIBIT IV B-3
Pedestrian Arcade - Garrison Street Elevation



Proposed Project

Fronting on Huntington Avenue amidst numerous late 20th century high-rise buildings, the Proposed Project in its scale and massing, choice of building materials, and use of specific design features has been planned to relate to this general context.

Standing a total of 200 feet to the top of the highest habitable floor, the scale of the Proposed Project is in keeping with current development along Huntington Avenue which contains buildings ranging from the 110-foot tall Colonnade Hotel to the 52-story Prudential Tower. The height selected for the Proposed Project, along with its massing scheme, was also influenced by its immediately adjacent buildings--the Marriott and Colonnade Hotels (385 and 110 feet tall, respectively). The building has been designed to stand as a transitional element between the two and in its massing has been divided into two vertical elements which relate to the verticality of the Marriott Hotel.

To strengthen the project's relationship to buildings within its vicinity on Huntingon Avenue and to sympathetically fill the existing gap on this corridor, the project draws on design elements of the surrounding structures. As described previously in this chapter, these key design features are as follows:

- A five-story base that corresponds to the Marriott Hotel base.

- A retail and pedestrian arcade which in use and scale relates to the public ground floor level of the Colonnade Hotel.

- Two story vertical elements at the upper levels responding to the verticality of high-rise buildings on Huntington Avenue.

Building materials for the 116 Huntington Avenue Project are planned to include brick and limestone-colored precast concrete with granite utilized on the retail arcade. In addition, metal cladding will be used at the central recessed bow window to contrast with the masonry materials on the remaining portion of

the facade, visually separating the mass of the building into two separate vertical components. One of the purposes in choosing this variety of materials was to break up the monochromatic building colors along this portion of Huntington Avenue and to enliven the streetscape along this major urban corridor. The choice of these materials was also influenced by those found on surrounding buildings--both along Huntington Avenue and in the St. Botolph neighborhood.

It is felt that further use of limestone colored materials as utilized on Copley Place buildings and the Colonnade Hotel would detract from the Project's relationship to the St. Botolph neighborhood. The relationship between the Proposed Project and the St. Botolph district is described in the following section.

Low-Build Alternative

The Low-Build Alternative is similar in design concept to the Proposed Project and therefore contains a number of elements and features which relate it to the Huntington Avenue context. The primary difference between the two proposals is that the Low-Build Alternative stands 152 feet to the top of the highest habitable floor or 48 feet less in height than the Proposed Project. This results in a building which, in scale, does not fit into the surrounding context of high rise development as effectively as the Proposed Project, nor does it act as an effective transition between the Marriott and Colonnade Hotels (see Draft EIR, Exhibit IV B-4; View No. 2).

The proposal does, however, relate to specific elements of neighboring buildings along Huntington Avenue. This is seen in some of its particular massing components and design features which have been discussed previously in this chapter and which are summarized below:

- Establishment of a scale and a box-like, horizontal massing relating to neighboring buildings on the west--the Colonnade Hotel and Greenhouse Apartments.

- Building height corresponding to the lower portion of the Copley Place offices.

- A projecting cornice and set back at the 10th floor corresponding in height to the Colonnade and reinforcing the relationship with this building.

- Spacing and rhythm of windows similar to that of the Colonnade.

- Ground level arcade corresponding to public ground floor level at the Colonnade.

- A band of flush windows at the 6th floor corresponding to the height of the three story Marriott Hotel base.

Comments received in response to the Draft EIR suggested that refinements be investigated for the Low-Build Alternative so that the building responds more effectively to the existing Huntington Avenue context (see Chapter V, Comments and Responses). This alternative's principal inconsistency with the surrounding environment is that the building is significantly lower in height than the high rise structures that characterize this corridor. Changes in this regard cannot be made due to the specific height limits that were established for this alternative by the Secretary of Environmental Affairs. It was also suggested that alterations be made to massing and design details of the Low-Build Alternative to enhance its relationship with Huntington Avenue. In doing so, however, the balance that the building exhibits between the Huntington Avenue and St. Botolph contexts would be diminished.

Building materials suggested for the Low-Build Alternative are essentially the same as those previously described for the Proposed Project. The only exception is that metal cladding is not utilized to differentiate between the two vertical elements, as is the case with the Proposed Project. The reasoning behind the use of the varying masonry materials remains the same as for the Proposed Project.

ST. BOTOLPH NEIGHBORHOOD

Proposed Project

Standing 200 feet to the top of the highest habitable floor, the Proposed Project is of a larger scale and massing than the predominantly low-rise 19th century buildings which exist in the adjacent St. Botolph neighborhood located south of the project site. Specific design features and building materials have been chosen to strengthen the building's relationship

to this older historic area. These attributes have been described previously in this section and are summarized below:

- o Rounded building edges, setbacks at the 5th, 8th, 14th stories, and a length of bow windows in the central portion of the building (front and rear elevations) utilized to reduce its bulk and sense of massing.

- o Bow windows and masonry materials used extensively in reference to the buildings in the historic district.

- o A 5-story base with a deep projecting cornice corresponding in height to Garrison Hall.

- o A pedestrian arcade wrapping around Garrison Street correlates to the first floor base of Garrison Hall.

- o Window patterns and horizontal bands at each floor level relating to the adjacent Garrison Hall.

Low-Build Alternative

Impacts of the Low-Build Alternative upon the St. Botolph area, along with mitigating features incorporated into its design, are in many ways similar to the Proposed Project. Principal differences result from its lower height. A summary of this alternative's relationship to the historic district in terms of scale, massing, and design elements are described below:

- o Standing 12 stories, only relatively small segments of this alternative are visible in the district.

- o Rounded building edges, bow windows along the front and rear elevations, and a setback at the 10th floor reduce its bulk and sense of massing.

- o Relationship to the historic district is strengthened through the use of masonry materials, bow windows, deep cornices, and horizontal bands that define floor levels.

- o Relationship and transition to Garrison Hall is established by the retail arcade and building setback at the 10th floor.

MITIGATION MEASURES

The following measures have been incorporated into the design of the Proposed Project in order to minimize any adverse effects on the area's visual quality:

- Establishment of an overall building height which acts as a transitional element between the high-rise Marriot Hotel and the mid-rise Colonnade Hotel and Garrison Hall buildings.

- Use of facade articulation and detailing which reflects the scale and rhythm of nearby Victorian era development, and which acts as a transitional element between the modern styling of buildings along the Huntington Avenue Corridor and the 19th century buildings immediately to the south.

- Establishment of building setbacks which correspond to the height of surrounding buildings, both on Huntington Avenue and in the St. Botolph neighborhood.

- Use of various masonry materials which not only reflect the character of 19th century development nearby, but also relate to those used on buildings along Huntington Avenue.

- Full design articulation of the south elevation to create a suitable visual relationship to the St. Botolph neighborhood.

INTRODUCTION

PREVIOUS ANALYSIS

Discussion of issues pertaining to geology and groundwater conditions in and around the project site was presented in the Draft EIR. This discussion was based on subsurface investigations conducted in the site area, which indicated that the site is generally underlain by granular fill followed by organic silt, sand, and marine clay, and that the proposed building foundation will extend below the existing groundwater level.

In order to minimize the potential for adjacent ground movements during construction, and in order to hydraulically isolate the excavation, walls of the proposed foundation will be constructed using the slurry method. This technique provides a great degree of lateral support, and creates a continuous concrete diaphragm which will ensure that groundwater seepage is minimized and that drawdown of the area's groundwater level does not occur. These issues and construction techniques are presented in detail in Chapter IV F and IV H of the Draft EIR.

GROUNDWATER MONITORING

Although construction of the Project is not expected to adversely affect groundwater levels, a number of measures will be taken to ensure that no temporary drawdown or long-term alteration of groundwater levels occurs. This is particularly important given the Project's proximity to 19th century buildings constructed on wood piles. Maintenance of groundwater levels is vital to the preservation of such wood pile foundations.

The Draft EIR describes various mitigation measures which will be utilized to ensure that groundwater levels will be maintained. These measures include preventive design, the use of construction performance criteria, the identification of predetermined actions to be taken if adverse effects do occur, and implementation of a groundwater monitoring program to occur before, during and after construction (see Draft EIR, Chapter IV F).

In response to the Draft EIR, the Secretary of Environmental Affairs requested that the Proponent develop an agreement concerning the proposed groundwater monitoring program in conjunction with the city. The Secretary also requested that this agreement include a commitment regarding funding and reporting of results. In response to this request, the Proponent has consulted with the BRA to determine the desirable elements of such an agreement, and has prepared a draft agreement for review by the BRA (see Exhibit IV C-1).

Although this agreement commits the Proponent to implementing and funding a groundwater monitoring program as previously described in the Draft EIR and in conformance with BRA requirements, it is understood by the Proponent that as a result of further BRA input, further revision of this agreement may occur. The Proponent will continue to work cooperatively with the BRA in order to finalize and execute this agreement, and remains fully commited to a responsible program of groundwater monitoring before, during and following construction of the 116 Huntington Avenue Project.

GROUNDWATER
MONITORING AGREEMENT
FOR
PARCEL 1, FENWAY URBAN RENEWAL AREA

AGREEMENT made as of the day of March, 1987, by and between the BOSTON REDEVELOPMENT AUTHORITY (the "Authority") and URBAN INVESTMENT AND DEVELOPMENT CO., (the "Applicant").

WITNESSETH, that in consideration of the mutual covenants and agreements herein contained, the parties agree as follows:

1. The Authority will petition the Zoning Commission of the City of Boston on behalf of the Applicant to designate as an Urban Renewal ("U") overlay subdistrict land in said City known as Parcel 1 of the Fenway Urban Renewal Area, bounded by Huntington Avenue, Harcourt Street, Garrison Street and Public Alley No. 401 (the "Locus").

2. The Applicant has entered into a Land Disposition Agreement ("LDA") and Development Impact Project Plan and Agreement (the "Plan") approved by vote of the Authority on March 26, 1987 after notice and public hearing, concerning development of the Locus. A certified copy of said vote is attached hereto as Exhibit A.

3. The Applicant has contracted with Childs, Bertman, Tseckares & Casendino, Inc. ("Architect") to provide drawings and specifications for the project represented by the Plan (the "Project").

4. The Applicant has contracted with McPhail Associates, soils engineers ("Engineer") to provide soil and geotechnical engineering services in connection with the Project.

5. The Applicant and the Authority hereby agree that the design review process required by the Plan and the LDA to be observed by the parties shall be as set forth in "Development Review Procedures", BRA, 1985 ("Design Review Process").

6. The Authority acknowledges that the Applicant received Tentative Developer Designation from the Authority for the Project on December 19, 1985, which satisfies Step One of the Design Review Process. The Authority further acknowledges that the Applicant, by the submission to the Authority of the Schematic Design drawings prepared by the Architect dated October 28, 1986 and December 17, 1986 and by the signing hereof will
have satisfied Step Two and Step Three of the Design Review Process.

7. The Authority will informally advise the Applicant concerning, and will actively cooperate with and publicly support, the Applicant's efforts to obtain from the appropriate municipal, state and federal bodies and agencies all such permits, licenses and approvals, and exceptions, variances, and other departures from the normal application of zoning and building codes and other ordinances and statutes which may be necessary in order to carry out development of the Project in the most expeditious and reasonable manner.

8. The Applicant agrees, at its own expense, to take the following measures in order to prevent and mitigate potentially adverse effects of groundwater level changes caused by below-grade construction on the Locus:

(a) To construct perimeter foundation walls for the Project's three-level below-grade parking structure using the slurry wall method, resting such slurry wall on the largely impermeable clay stratum underlying the Locus. Contract documents for construction of the Project will contain specific performance criteria, reasonably acceptable to the Authority, designed to minimize groundwater infiltration into the excavation;

(b) To require all contractors bidding on excavation and below-grade construction to submit with their bid proposal a manual of operations outlining procedures to ensure that mitigation measures designed to

minimize groundwater infiltration are enforced. This manual of operations, which will be incorporated into final contract documents, will require that the contractor designate one full-time on-site employee as a mitigation compliance and monitoring officer;

(c) To undertake a groundwater monitoring program to insure early detection of groundwater drawdown which could damage wooden piles supporting the foundations of neighboring 19th Century structures located on St. Botolph Street. The Applicant will install no less than four (4) groundwater observation wells in appropriate locations in the immediate vicinity of the Locus to supplement those already existing. Commencing not less than one (1) month prior to construction, and continuing until six (6) months after completing foundation construction, groundwater levels in all observation wells will be monitored by the Engineer at appropriate intervals, with the results of such monitoring to be reported monthly to the Authority; and

(d) To implement such mitigation measures as may be necessary or appropriate in order to minimize adverse effects of significant groundwater drawdown on surrounding wooden pile caps. In this regard, upon determination by the Engineer that significant drawdown has occurred, or upon receipt of written notice from the Authority stating its determination that the drawdown evidenced by any such report is significant, the Applicant agrees to submit to the Authority, within ten (10) days thereafter, a written report from the Engineer proposing mitigation measures which the Applicant is prepared to undertake. If the Authority approves the methods described in such report (the failure to disapprove within ten (10) days after submission to constitute approval) the Applicant will implement such

measures, at its own expense, as soon as practicable thereafter. If the Authority disapproves such measures, the Authority shall so state in writing to the Applicant, explaining the reasons for such disapproval. If the Authority and Applicant, with the advice of the Engineer, are unable to agree on appropriate measures within ____ days after notice of disapproval, the Authority shall have the right to hire an independent geotechnical or soils engineer of the Authority's choosing, subject to the reasonable approval of the Applicant, to review the available data and recommend appropriate mitigation measures. The Applicant agrees to pay for the reasonable cost of the services of such consultant, up to a maximum of $12,000.00 in the aggregate.

9. Reference is made to the fact that the Applicant's interest in a portion of the Locus will be acquired through a deed from the Authority to the Applicant's air rights lessor, as more fully described in the LDA, and the Locus is in its entirety to be developed and otherwise subject to the provisions of the LDA. It is specifically agreed that this Agreement and the LDA are intended to supplement each other. However, where ambiguities or inconsistencies exist, this Agreement shall govern.

10. This Agreement shall be binding upon the successors and assigns of the Applicant and the Authority. Neither the Applicant nor any successor or assign of the Applicant shall be liable for any breach of this Agreement occurring after the period during which it was owner of the Locus. The Authority agrees to look only to the assets of the Applicant and not to the assets of any general or limited partner, shareholder, officer, director or other principal of the Applicant in the event of any breach hereunder.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed in their behalf by their respective officers and general partners thereunto duly authorized as of the day and year first above set forth.

BOSTON REDEVELOPMENT AUTHORITY

By:________________________
Stephen Coyle, Director
Hereunto Duly Authorized

URBAN INVESTMENT AND
DEVELOPMENT CO.

By:________________________
Rudolph K. Umscheid,
Senior Vice President

INTRODUCTION

Provided here is a summary of mitigation measures proposed to minimize any potential adverse effects of the 116 Huntington Avenue Project. These include measures previously described in the Draft EIR, as well as measures developed during the preparation of this Final EIR.

TRANSPORTATION

PROPONENT MEASURES

- Provision during the Project's off hours of parking for 20-30 automobiles owned by neighborhood residents.
- Provision of promotional material (in a building newsletter) on ridesharing to tenants.
- Provision of commuter rail schedules and other MBTA information to tenants.
- Promotion of the availability of monthly "T" passes on sale at the MBTA concourse which will connect Copley Place with the new Back Bay Orange Line/ Commuter Rail station.
- Provision of parking space in the on-site garage for a van, if a vanpool can be formed among building tenants.
- Provision of a convenient and secure bicycle storage area at no charge.
- Provision of building hours (8:00 AM to 6:00 PM), which permit employers to utilize flex-time or staggered work hours to reduce peak hour traffic.
- Designation of a contact person in the building management office to coordinate demand reduction efforts and provide public information as required.
- Restriction of major tenant deliveries (which typically require the moving of furniture, etc.) to before 7:00 AM or after 6:00 PM.
- Restriction of deliveries by tractor-trailer.
- Restriction of timing of deliveries to the loading dock.

- Provision of collection boxes for the major courier services (Federal Express, Purolator, etc.) at a location convenient to the loading dock. Dropoffs/ pickups will not be accepted at other locations.

- All truck loads from the project greater than 2-1/2 tons will be restricted from St. Botolph Street.

- Tenant deliveries on Harcourt Street will be coordinated between Copley Place and 116 Huntington Avenue.

- Deliveries will only be accepted at the loading dock and will be restricted from the main entrance.

- Development of a commuter management plan in cooperation with Caravan Commuters, Inc.

- Development of a traffic access plan and short-term parking program with Boston's Traffic and Parking Department.

- Development of a solution with the Boston Fire Department for an improved Harcourt Street traffic island.

MEASURES TO BE RECOMMENDED TO THE TRAFFIC AND PARKING DEPARTMENT

- Removal of 100 feet of parking on the Massachusetts Avenue Northbound approach to St. Botolph Street.

- Provision for right turns on red at Boylston Street and Massachusetts Avenue, and at Columbus Avenue and West Newton Street.

- Relocation of taxi stand at Boylston Street and Massachusetts Avenue.

- Removal of parking on the west side of Massachusetts Avenue between the new Orange Line station and Columbus Avenue.

- On the north side of St. Botolph Street, removal of 100 feet of parking nearest Massachusetts Avenue.

- o Removal of the existing three spaces in front of the site and conversion of entire frontage to a taxi stand.
- o Restriction of idling tour buses to the far right lane on the westbound side of Huntington Avenue.
- o Posting of a Right Turn Only sign at the Project's exit on Garrison Street.
- o Investigation of traffic signal phasing improvements at the intersections of Dartmouth Street and Columbus Avenue, Columbus Avenue and Massachusetts Avenue, and West Newton Street and Columbus Avenue.
- o Signal timing changes will be studied to improve safety levels at pedestrian crossings.
- o Consideration of conversion of some metered spaces to residential parking.
- o Investigation of no parking or stopping along Mass Avenue--as on Arlington, Congress, and Tremont Streets.
- o Consideration of various one-way traffic flow systems to minimize traffic in the St. Botolph neighborhood.

VISUAL QUALITY

- o Establishment of an overall building height to create a transition between the high-rise Marriott Hotel and the mid-rise Colonnade Hotel and Garrison Hall buildings.
- o Use of facade articulation which acts as a transitional element between the modern buildings along Huntington Avenue and the 19th century buildings in the St. Botolph neighborhood.
- o Design of building setbacks which correspond to the height of surrounding buildings, both on Huntington Avenue and in the St. Botolph neighborhood.

- Use of various masonry materials that not only reflect the character of 19th century development nearby, but also relate to those materials used on buildings along Huntington Avenue.
- Full design articulation of the south elevation to create a suitable relationship to the St. Botolph neighborhood.

HISTORIC RESOURCES

- Design of building to include use of building setbacks, masonry materials, and bay windows to visually link the Project to the adjacent St. Botolph neighborhood.
- Design of building to fill a missing piece on a major urban corridor, establish a cohesive edge to the St. Botolph District, and encourage pedestrian activity.
- Provision of traffic mitigation measures to reduce traffic impacts of the Project on the St. Botolph neighborhood.
- Provision of a construction mitigation program to protect the surrounding buildings from any potential construction impacts and to safeguard against changes in groundwater levels.

GEOLOGY AND GROUNDWATER

- Design of excavation procedures and lateral support system to minimize effects to groundwater levels and neighboring structures.
- Survey and monitoring of area building condition.
- Groundwater monitoring both on and off-site during and after construction.
- In consultation with the BRA, development and execution of an agreement for groundwater monitoring and reporting.
- See also "Construction" below.

WATER AND SEWER

- Provision of low flow toilets and flow restrictive faucets to reduce the volume of water demand and wastewater generation.
- Provision of oil, gas, and grease traps in the garage drainage facility.
- Coordination with the Boston Water and Sewer Commission and any other appropriate agency for consideration of water and sewer connections.

CONSTRUCTION

- Specification of truck routes to avoid residential streets.
- Generally, trucks will only access the site from Huntington Avenue and Harcourt Street, and in the latter phase of construction via the loading dock off of Harcourt Street.
- Placement of signage on local residential streets prohibiting use by trucks.
- Dispatch of trucks to the site by radio during excavation and concrete pouring, minimizing idling nearby.
- Covering of trucks carrying excavate to prevent spillage.
- No double parking or traffic obstruction on side streets as a result of construction staging.
- Provision of walkways around the site as necessary to maintain pedestrian passage.
- Safety fencing placed around the perimeter of the site will help to shield the community from dust and noise.
- Exposed soil will be watered or treated with calcium chloride as needed to control fugitive dust.
- Construction work area will be kept clear and free of trash.

- Street cleaning will be conducted as needed on the streets that border the site.

- Aggregate storage piles exposed to the wind will, whenever possible, be located on the side of the site away from the St. Botolph neighborhood.

- All equipment to be used will be inspected to ensure a noise muffler is in place and in good working condition.

- Construction work will typically occur during the daytime hours when existing noise levels are high and can help mask the noise from construction.

- Equipment operation will, wherever possible, strive to keep noise levels low.

- Use of a slurry wall rather than other foundation wall systems, thereby minimizing adjacent ground movement and groundwater infiltration.

- Use of a mat foundation system which eliminates the need for pile driving.

- Groundwater monitoring before, during, and after the construction process.

- Survey/monitoring of condition of adjacent structures before, during and after the construction process.

- Repair of any damaged streets or sidewalks after Project completion.

- Designation of a community liaison person to facilitate communication with local residents during construction.

- Conducting of periodic community meetings (approximately every six weeks) as a forum for presenting the neighborhood's construction-related concerns.

- Publication of a periodic memorandum to notify neighborhood residents of pertinent construction activities and other construction-related information.

- Alley 401 will not be used for parking by construction crews.

- Construction deliveries will be restricted to Huntington Avenue and upper Harcourt Street.

- Parking at a reduced rate on a space available basis will be provided for construction workers at either the Tent City or the Copley Place garages.

INTRODUCTION

This chapter includes comments received from public agencies and community residents in regard to the Draft EIR for 116 Huntington Avenue, and presents responses to those comments. For each comment letter received by the Executive Office of Environmental Affairs and for the Secretary's Certificate on the Draft EIR, this chapter presents the following:

- A copy of the original letter. Principal comments are highlighted with sequential numbers in the right-hand column.

- A summary of the principal comments found in each letter -- This is intended to identify the topic and highlight principal comments and questions for which a response in this Final EIR is provided.

- A response to each summarized comment -- Each response refers to a specific summarized comment. Responses are numerically keyed to corresponding letters and comments. For example, the second comment in letter #3 is keyed as 3.2 Similarly, the tenth comment in letter #8 is keyed as 8.10.

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S. DUKAKIS
GOVERNOR

JAMES S. HOYTE
SECRETARY

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS

ON THE

DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Parcel 1 - 116 Huntington Avenue
PROJECT LOCATION	: Boston
EOEA NUMBER	: 5777
PROJECT PROPONENT	: Urban Investment and Development Co.
DATE NOTICED IN MONITOR	: December 10, 1986

The Secretary of Environmental Affairs herein issues a statement that the Draft Environmental Impact Report submitted on the above project adequately and properly complies with the Massachusetts Environmental Policy Act (G.L., c.30, s.61-62H) and with its implementing regulations (301 CMR 11.00).

A number of very thoughtful comments on the DEIR were received. In addition to that which is outlined below, responses to the comments in these letters should be provided in the FEIR. The FEIR should follow the same format as the Draft. It must contain a copy of this Certificate and should address itself to the following areas:

Traffic and Parking

The traffic and parking analysis presented a good foundation study to overall traffic conditions in and around the project. Comments and concerns which must be resolved in the FEIR include both data/assumption related as well as operational.

Trip generation, vehicle occupancy and mode split rates were
developed using data from The Copley Place EIR and the 500
Boylston EIR. In addition, employee surveys in the area were
incorporated in these derived rates. Clearly, local data, where
it is has been developed on a statistically sound manner, is 1.1
preferable over nationwide averages. Additional explanation
regarding how these rates were developed should be supplied.
Vehicle occupancy rates appear to be quite high. How do these
derived rates relate to other rates recorded in and around
Boston? Document the difference in vehicle trips based on other,
perhaps lower, rates. Specifically, how does the mode split 1.2
estimated for the project relate to "Parking in Central Boston:
Meeting the Access Needs for Growing Downtown" as referenced in
the DEIR?

The project is estimated to generate more vehicles than can
be accommodated in its underground parking facility. Were the
displaced parkers from the existing surface lot calculated into 1.3
the parking demand analysis? It does not appear that these
vehicles were considered. Also, the project description
references the proponent's agreement with the BRA to set aside a
specific number of spaces for residents of another portion of the 1.4
Tent City site. Is this "specific" number known? Is the 94
spaces used in analysis inclusive or exclusive of these
designated spaces? What is the availability of parking at nearby 1.5
facilities? (i.e. Prudential).

Among the areas of concern raised by comments on the DEIR
was a small area of raised triangular sidewalk that protects
Harcourt Street from direct access from Hungtington Avenue. 1.6
Residents of the area note that vehicles cross over the
pedestrian areas to access "short cuts". Among mitigation
proposed in the FEIR, this area should be examined. In addition,
ways to discourage use of the neighborhood streets should be
examined in more detail. Findings should be supported by speed 1.7
and delay/travel time data.

How do truck loading zones relate to averages provided based 1.8
on building size? In relation to planned uses, what type/volume
of truck activity can be expected? Are truck facilities
adequate?

I note with satisfaction that vanpools formed by tenants may receive designated parking. It should be understood that frequently vanpools are comprised of riders who might work in a number of nearby locations. In addition to reducing parking demand for the project, such a program contributes to reduction on overall roadway network and parking demand, thus providing benefit beyond the project itself.

A wide variety of traffic mitigation options were presented in the DEIR. These options and their feasibility should be discussed with appropriate city officials. The feasibility of implementation, costs and responsibility for these measures must be addressed in the FEIR, along with scheduling. 1.9

Finally, the garage entrance location appears to continue to be controversial. The FEIR should address this issue, as noted in Commissioner Dimino's comment on the DEIR. 1.10

Visual Quality/Urban Design

Design is a subjective process, and there are no "correct" solutions. Some alternatives are, nevertheless, more sensitive or responsive to their contexts than others. The design process for this project has evolved from the presentation of a 31 story structure to a structure roughly half the height of the original proposal. The two alternatives studied in the DEIR, one 16 stories and and one 12 stories, have both similarities and differences.

The proposed project consists of 271,500 gsf of office space and 6,500 g.s.f. of retail space. Approximately 94 below - grade level parking spaces are also planned. The building height is 200'(16 stories). A "Low-Build" alternative was also evaluated, however the evaluation consisted primarily of urban design issues. The Low-Build alternative would consist of 210,000 gsf of office and 6,000 gsf of retail uses. The number of parking spaces for this alternative is undetermined. Total building height would be 152'(12 stories).

The FEIR must describe the building programs which lead to the 16 and the 12 story building masses. While the detailed facade designs do not appear to have reached advanced stages, the DEIR discussions continuously stress that the 16 story building mass and details are more responsive to the Huntington Avenue existing context than are those of the 12 story building design. Could further design refinement address this apparent short coming of the Low Build alternative? From a design perspective in relation to other future building in the area, how will the height of this proposed project at 16 and 12 stories relate to limitations to be imposed by the Interim Planning Overlay District (IPOD)? 1.11 1.12 1.13

Finally, no plans at street level were presented in the DEIR. The FEIR should present such plans, at readable scales, that show how pedestrian access and safety will be provided. These plans should clearly show how the building relates to the sidewalk and street. 1.14

Groundwater

The proponent's consultants have developed a program of mitigation measures based on a model prepared for the 500 Boylston Street development. The DEIR notes that the model for 500 Boylston has been approved by the City. The proponent should 1.1
develop a similar agreement for the 116 Huntington Avenue project and report on this agreement on the FEIR. Of particular concern is the monitoring, both during and after construction. A commitment for funding and reporting results must be developed.

The Final EIR, when complete, must be circulated to the recipients of the Draft EIR and the authors of the attached comments.

January 23, 1987
DATE

JAMES S. HOYTE, SECRETARY

JSH/JD/bk

LETTER #1
CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

(1.1) TOPIC: TRANSPORTATION

COMMENT: Provide additional explanation on how trip generation, vehicle occupancy, and mode split rates were developed.

RESPONSE: The Probable Project Impacts section of Chapter IV A details the analysis assumptions and includes a sensitivity analysis on a range of vehicle occupany rates. Specific assumptions used are also identified.

(1.2) TOPIC: TRANSPORTATION

COMMENT: How do trip generation, vehicle occupancy, and mode split rates used for the project relate to other rates recorded in the Boston area? How does the mode split for the project compare with the mode split from "Parking in Central Boston: Meeting the Access Needs for Growing Downtown"?

RESPONSE: A detailed explanation of the trip generation assumptions used in the transportation analysis is included in the section of Chapter IV A entitled "Adjustments to Trip Generation Rates." In general, the rates used in this analysis are consistent with other developments in Central Boston.

(1.3) TOPIC: TRANSPORTATION

COMMENT: Were displaced parkers from the existing surface lot calculated into the parking demand analysis?

RESPONSE: The typical daily usage of 36 parkers in the existing lot was considered in the analysis. These parkers will be reassigned to the Tent City garage. This is described in the Parking Impacts Section of Chapter IV A.

(1.4) TOPIC: TRANSPORTATION

COMMENT: The project description references the Proponent's agreement with the BRA to set aside a specific number of spaces for residents of another portion of the Tent

City site. Is this "specific" number known? Is the 94 spaces uses in analysis inclusive or exclusive of these designated spaces?

RESPONSE: Under the Description of the Environmental section of Chapter IV A, the breakout of spaces at Tent City is described. 369 spaces are allocated to office tenants of Copley Place, 129 are allocated to Tent City residents and 200 public spaces will be available for short-term users. The 94 spaces referred to above are actually in the 116 Huntington Avenue project and are completely separate from the Tent City parking.

(1.5) TOPIC: TRANSPORTATION

COMMENT: What is the availability of parking at nearby facilities (ie. Prudential)?

RESPONSE: The availability of parking at the Prudential Center, Copley Place and Tent City garages is discussed in the Description of the Environment section of Chapter IV A.

(1.6) TOPIC: TRANSPORTATION

COMMENT: Proposed mitigation measures should address the effectiveness of the triangular sidewalk on Harcourt Streeet as a protection from direct access to neighborhood streets from Huntington Avenue.

RESPONSE: The problems that have been described at this location and potential solutions are discussed in the Probable Project Impacts section of Chapter IV A.

(1.7) TOPIC: TRANSPORTATION

COMMENT: Ways to discourage use of neighborhood streets should be examined in more detail and supported by speed and delay/travel time data.

RESPONSE: A considerable data collection effort was undertaken to assess potential methods available to discourage use of St. Botolph neighborhood streets. Several alternatives were considered and all are described in the Mitigation section of Chapter IV A.

(1.8) TOPIC: TRANSPORTATION

COMMENT: How does truck loading area compare to averages based on building size? What type and volume of truck traffic is expected? Are truck loading facilities adequate?

RESPONSE: Data was gathered on truck loading facilities for similar size office buildings, along with estimates of the volume of delivery activity. The truck loading discussion in the Probable Project Impacts section of Chapter IV A indicates that the planned loading facilities appear to be adequate.

(1.9) TOPIC: TRANSPORTATION

COMMENT: Discuss feasibility, cost, responsibilities, and scheduling of traffic mitigation measures.

RESPONSE: This issue is discussed in the Mitigation section of Chapter IV A. Most of the physical improvements can be categorized as low cost, short term Transportation Systems Management (TSM) measures which are the responsibility of the Boston Transportation Department (BTD). The Proponent has indicated support of these measures and a willingness to work cooperatively with the city and the community to achieve them.

(1.10) TOPIC: TRANSPORTATION

COMMENT: Address issue of garage entrance location, as requested by Commissioner Dimino.

RESPONSE: Additional information on the alternate garage locations is presented in the Probable Project Impacts section of Chapter IV A.

(1.11) TOPIC: VISUAL QUALITY

COMMENT: Describe building programs that lead to the 16 and 12-story building masses.

RESPONSE: The design and programmatic objectives which lead to the 16 and 12-story building masses are described in Chapter IV B, Visual Quality. The discussion provided in Chapter IV B also includes a detailed floor-by-floor description of the program of both the Proposed Project and Low-Build Alternative.

(1.12) TOPIC: VISUAL QUALITY

COMMENT: Can the design of the Low Build Alternative be refined to make its mass and details more responsive to the existing Huntington Avenue context?

RESPONSE: The massing and details of the Low-Build Alternative have been developed to respond to its Huntington Avenue context. For instance, the building steps down to relate to the height of the Colonnade Hotel; its column and window spacing is similar to the Colonnade's; and limestone colored pre-cast concrete--similar to the color used on the adjacent Colonnade Hotel, Marriott Hotel and Copley Place--is used extensively on the building's exterior. Although building materials could be further revised to better correspond with the character of Huntington Avenue, the Proponent does not feel that this would be appropriate or desirable, given the site's proximity to the St. Botolph Neighborhood. This issue is more fully discussed in Chapter IV B, Visual Quality.

(1.13) TOPIC: VISUAL QUALITY

COMMENT: From a design perspective, how will the height of the Project at 16 and 12 stories relate to height limits to be imposed by the IPOD?

RESPONSE: This issue is fully discussed in Chapter IV B, Visual Quality. Briefly, if approved by the BRA and Boston Zoning Commission, the proposed IPOD would set height

standards of 125' to 155' in the district in which the site is located. These heights are standards, not limits. Projects which propose to exceed these standards, but which are substantially consistent with IPOD requirements and which provide certain public benefits, can be granted an interim planning permit by the Board of Appeal. The Proposed Project and Low-Build Alternative are 200 feet and 152 feet in height, respectively. It is anticipated that this project will be exempt from IPOD requirements because it has already received substantial BRA design review, and the Proponent will seek an Urban Renewal District ("U" district zoning) designation for the project (see Chapter IV B, Visual Quality).

(1.14) TOPIC: VISUAL QUALITY

COMMENT: Present street level plans at readable scales showing pedestrian access, safety features, and relationship of building to sidewalk and street.

RESPONSE: The requested pedestrian circulation plan is presented and described in Chapter II, Project and Area Description.

(1.15) TOPIC: GEOLOGY AND GROUNDWATER

COMMENT: Develop groundwater mitigation agreement with the City that focuses on monitoring, and indicates a commitment to funding and to reporting of results.

RESPONSE: As discussed in Chapter IV C, the Proponent has begun discussion with the BRA concerning an agreement to fund and report the results of a detailed groundwater monitoring program oriented towards ensuring that groundwater levels are properly maintained, primarily to preserve the wood pile foundations of the St. Botolph neighborhood structures. Groundwater observation wells will be installed in the St. Botolph neighborhood to supplement those already present. The Proponent's geotechnical engineer will periodically monitor and report groundwater levels in all observation wells to ensure early detection of drawdown and, thereby, to enable immediate implementation of predetermined

mitigation measures, if necessary, before adverse effects can result. The monitoring program will commence several months prior to construction and will continue for six months after foundation construction is complete. This groundwater monitoring program is also discussed in Chapter IV C, Geology and Groundwater as well as the proposed groundwater monitoring agreement with the BRA.

The Commonwealth of Massachusetts

Office of the Secretary of State
Michael Joseph Connolly, Secretary

Massachusetts Historical Commission
Valerie A. Talmage
Executive Director
State Historic Preservation Officer

January 9, 1987

Secretary James S. Hoyte
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RE: 116 Huntington Avenue, Boston EOEA No. 5777

Dear Secretary Hoyte:

Staff of the Massachusetts Historical Commission have reviewed the Draft EIR for the proposed project listed above.

The project is located adjacent to the St. Botolph Street Conservation District which is listed on the State Register of Historic Places.

The project, as originally proposed, was to be 31 stories in height. The Draft EIR presents two alternatives for the site, the current 16-story proposed project and a 12-story low-build alternative. Both proposals would have an adverse effect on the adjacent historic district through the introduction of a tower which exceeds the generally lower heights characteristic of the conservation district (950 CMR 71.05(2)(c)). In addition, traffic and construction related impacts to the historic district are anticipated. 2.1

The Draft EIR details mitigating measures to the 16-story tower, to minimize the adverse effects to the historic resources. These measures include the design which echoes the materials and details of buildings in the St. Botolph Street area. However, the proposed massing and size of this alternative are uncharacteristic of the Conservation District. Also, a traffic mitigation plan and construction monitoring plan are outlined.

The staff of the MHC has reviewed the two alternatives. The low-build alternative, while still introducing visual intrusions to the adjacent district has lesser adverse impact than the 16-story alternative. The mitigating aspects of the 12-story alternative (i.e., reduction in size, scale and massing; the use of compatible materials and design elements) should also be described. In addition, the Final EIR should address the feasibility of the low-build alternative as a mitigating measure for the adverse impacts created by the development of 116 Huntington Avenue. 2.2

These comments are offered to assist in compliance with M.G.L. Ch. 9, ss. 26-27C (950 CMR 71.00) and MEPA.

If you have any questions, please contact Maureen Cavanaugh at this office.

Sincerely,

Valerie A. Talmage
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

cc: BRA
BLC
BPA
CAC
UIDC

VAT/MC/dr

(2.1) TOPIC: HISTORIC RESOURCES

COMMENT: Both proposals will have adverse impacts upon the historic district due to height, traffic, and construction effects of the project.

RESPONSE: Analysis presented in the Draft EIR and supplemented in this Final EIR indicates that neither the Proposed Project nor Low-Build Alternative will result in environmental impacts which cannot be adequately mitigated using the design and construction measures committed to by the Proponent as part of this EIR process. These measures are described in Chapter V of this Final EIR.

(2.2) TOPIC: HISTORIC RESOURCES

COMMENT: Describe mitigating measures comprised in the Low-Build Alternative and discuss the Low-Build Alternative as a mitigation measure for impacts created by the 116 Huntington Avenue Project.

RESPONSE: Various measures are incorporated in the design of the Low-Build Alternative to ensure the building's visual compatibility with its context. These measures are described in Chapter IV B, Visual Quality. These include measures intended to respond to development in the St. Botolph Street area as well as to the site's Huntington Avenue context.

The design of the Low-Build Alternative has been formulated for purposes of this EIR analysis, and does not represent a building which the Proponent believes to be economically feasible. The Proponent has not proposed the Low-Build Alternative as a mitigation measure for the 116 Huntington Avenue Project. The Low-Build Alternative does, however, result in a building which is less visible from St. Botolph Street, as compared to the Proposed Project.

Letter 3

MASSACHUSETTS WATER RESOURCES AUTHORITY
CHARLESTOWN NAVY YARD
100 FIRST AVENUE
BOSTON, MASSACHUSETTS 02129

AMES S. HOYTE
CHAIRMAN

TELEPHONE
(617) 242-6000

January 8, 1987

Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Attn: MEPA UNIT - Jollene Dubner

Re: Enviromental Monitor - Dec. 10, 1986
Draft - 116 Huntington Ave./Parcel 1 EIR
EOEA No. 5777

Dear Ms. Dubner:

Having reviewed EOEA No. 5777, the Draft EIR for the 116 Huntington Ave./Parcel 1 project, we request that the effects of additional flows on the CSO discharge during wet weather be investigated. 3.1

Should you have any questions, please do not hesitate to contact me at 242-6000.

Very truly yours,

Katina N. Belezos
Project Engineer
Engineering Technical Support

(3.1) TOPIC: WATER AND SEWER

COMMENT: Study the effect of additional flows on CSO discharge during wet weather.

RESPONSE: The Proposed Project is to be constructed on a site that is presently covered by an impervious surface. Therefore, there will be no increase in storm drainage from the site during wet weather. The additional sanitary flow represents an increase of approximately 0.05 percent of the capacity of the West Side Interceptor to carry flows at the location of the nearest combined sewer overflow. This negligible increase in flow will have no significant impact on either the number or volume of overflow occurances.

Letter 4

Metropolitan Area Planning Council

110 Tremont Street Boston, Massachusetts 02108 (617)-451-2770

Serving 101 Cities & Towns in Metropolitan Boston

MAPC

January 8, 1987

The Honorable James S. Hoyte, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Attention: MEPA Unit

RE: 116 Huntington Avenue, Boston (EOEA #5777)
(MAPC #DEIR-87-9, Received 12/10/86)

Dear Secretary Hoyte:

In accordance with the provisions of Chapter 30, Section 62 of the Massachusetts General Laws, the Council has reviewed the above Draft Environmental Impact Report. In reviewing the DEIR, MAPC offers the following comments.

The proposed project would build an office/retail development of approximately 275,000 square feet of floor space on a site cleared as part of the construction of the Massachusetts Turnpike Extension (1960's) and now used for parking.

Although this project has significant impacts, the site appears to be a better location than most for such development. The project is well-designed and is responsive to the aesthetic and socio-economic character of the neighborhood.

Parking is clearly a problem. This project not only brings a net shortfall of 137 long-term spaces (all-day commuters), but it recommends the elimination of a substantial amount of residential and metered parking for purposes of reducing traffic impacts. Given that this area currently suffers a shortage of both residential and commuter parking, the removal of on-street spaces is not trivial. 4.1

In order to reduce the number of vehicle trips to this site, a number of initiatives could be undertaken. MAPC encourages the proponent to work with Caravan for Commuters, Inc. It provides complete commute management services--planning, marketing, and implementing programs to serve commuter needs while reducing vehicle trips. Caravan helps employers set up vanpools and carpools, provides schedule and route information for all modes of public transportation and coordinates/expedites new shuttles from employer 4.2

sites to public transportation and other services. Caravan for Commuters, Inc. is a non-profit agency and provides services to both public and private organizations in meeting their commputer transportation needs. It is located in the State Transportation Building at 10 Park Plaza, Boston, and can be reached at 973-7189.

Sincerely,

Joel B. Bard
Assistant Director/
General Counsel

JBB/CWB/lab
cc: R. K. Umscheid , Urban Investment & Development Co.
Richard Dimino, MAPC Rep., Boston
Paul Reavis, BRA
Carol Blair, MAPC Staff

(A)

LETTER #4
METROPOLITAN AREA PLANNING COUNCIL

(4.1) TOPIC: TRANSPORTATION

COMMENT: Eliminating on-street parking spaces will exacerbate the current parking shortage problem.

RESPONSE: It is agreed that the elimination of on-street parking will exacerbate the current parking shortage problem. The need to expedite traffic flow must be carefully balanced against the need for parking, particularly in a residential area like the St. Botolph neighborhood. This comment is addressed in the Mitigation Measures section of Chapter IV A. However, proposed overnight parking in the proposed building for residents of the St. Botolph neighborhood should alleviate to some extent the loss of on-street parking spaces.

(4.2) TOPIC: TRANSPORTATION

COMMENT: The Proponent should work with Caravan for Commuters, Inc. in order to reduce vehicle trips, and to minimize parking needs.

RESPONSE: The proponent intends to work with Caravan for Commuters, Inc. to establish vanpools among building tenants. This comment is responded to in the Mitigation Measures section of Chapter IV A.

)STON
:DEVELOPMENT
JTHORITY

mond L. Flynn
r

phen Coyle
'or

City Hall Square
on, MA 02201
722-4300

January 16, 1987

Secretary James S. Hoyte
Executive Office of Environmental
Affairs
100 Cambridge Street
Boston, MA 02202

Attn: MEPA Unit

Dear Secretary Hoyte:

Re: EOEA #5777 - 116 Huntington Avenue Draft Environmental Impact Report

Pursuant to regulations implementing M.G.L., Chapter 30, Sections 62-62H, the Boston Redevelopment Authority has reviewed the above-referenced Environmental Impact Report and submits the following comments.

The proposed 116 Huntington Avenue project involves the construction of 278,000 square feet of office and retail space, with 94 below-grade parking spaces, on an approximately half-acre site cleared in the early 1960s as part of the Massachusetts Turnpike Extension construction and currently used for parking. The project has undergone extensive review with the Boston Redevelopment Authority, which is the lead review agency through the developer designation process, and with residents of the adjacent St. Botolph neighborhood. As part of the Authority's on-going review function, a number of concerns raised by the neighborhood will be addressed through this planning process. In addition, the City's zoning proposals for an Interim Planning Overlay District (IPOD) will protect the adjoining neighborhood through both height and density (floor area ratio) limitations.

During the preparation of the Draft EIR, the environmental consultant to the proponent met on a number of occasions with members of the St. Botolph community. Several of their concerns were identified and were examined during this process. Among these were:

Further review of access/egress alternatives to the garage from Harcourt and Garrison Streets;

Assistance in selection of intersections evaluated as a part of the Traffic and Parking section;

Closer attention to the traffic management issues; and

Further evaluation of construction analysis and mitigation measures.

In general, we find that the DEIR has adequately addressed the major environmental issues of the 116 Huntington Avenue project and has presented a comprehensive analysis of the anticipated impacts of the development of this building. However, we do have a number of comments concerning the information contained in the EIR, many of which are matters of clarification or correction. These comments are attached hereto as Attachment A.

As you may know, certain financial aspects of this project are tied to the BRA's support for the nearby Tent City (Leighton Park) Development. Without the support of Urban Investment and Development Corp. and JMB, Inc., the Tent City project, so long a dream for the City and South End community, might not have proceeded. Be assured, however, that the Authority has and will conduct its review of this development in accordance with the Authority's statutory responsibilities and development review procedures.

We trust that the above comments will be useful in preparing the Final EIR and look forward to reviewing that document.

Sincerely,

Stephen Coyle
Director

cc: R.K. Umscheid
Senior Vice President
Urban Investment and Development Company

ATTACHMENT A

Project and Area Description

On page II-5 (paragraph 3), it should be noted that the Prudential Center development did not result from the Fenway Urban Renewal Plan, which was approved in 1965, but rather that it preceded the Plan. 5.1

Description of Alternatives

We request that the Final EIR provide an explanation of how the specific parameters of the Low-Build alternative (proportion, design, parapet height, etc.) were determined. 5.2

Traffic and Parking

On pages IV A-8 to A-10, the volumes in Table IV A-1 do not always agree with the volumes given in Exhibits IV A-3 and 4 (e.g., Garrison Street south of Huntington Avenue). This discrepancy should be explained in the Final EIR. 5.3

Exhibit IV A-6 does not show Bus Route #68 passing in front of the project site, as indicated in the text (pg. IV A-14). The second "310" in the last paragraph of this page (IV A-14) should be "315". Also, should not "work" (top line, page IV A-27) be "non-work"? 5.4

On page IV A-23 the following project should be added to the development activity list: 5.5

420 Boylston Street	Office	100,765 SF
	Retail	12,965 SF

In Exhibit IV A-10, the FEIR should explain why Columbus Avenue eastbound at Dartmouth Avenue is less under Build conditions than under No-build (530 vs. 550); and in Exhibit IV A-11, why Huntington Avenue westbound (through the underpass) is less under Build than under No-Build (668 vs. 694). Also, in Exhibit IV A-11, the significant project-generated increase on Columbus Avenue eastbound and westbound, at West Newton, from 322/483 (No-Build) to 539/782 (Build) should be explained, since the project is expected to generate only 172 P.M. peak hour trips. An explanation also is needed of the improvement in V/C ratio at West Newton/Columbus from 0.84 (No-Build) to 0.74 (Build) (Table IV A-20), especially with the projected increase in Columbus Avenue traffic at this intersection, as noted previously. 5.6 5.7 5.8

The Final EIR also should describe how making Garrison Street one-way southbound (page IV A-53) will serve as a mitigation measure to reduce travel on St. Botolph Street. 5.9

Historic Resources

In Exhibit IV C-2, the South End Historic District boundary is incorrect; the National Register District extends to Yarmouth Street and includes the properties on the northerly side of Berkeley Street while the Landmark District boundary extends along the Southwest Corridor right-of-way to Tremont Street. 5.10

Wind

The wind study indicates that the project would not cause any exceedances of criteria for acceptability and should slightly improve pedestrian level wind conditions in the project area. However, in comparison with the Copley Place wind impact study, for five locations which appear to be the same, the projected wind speeds for existing conditions determined by the 116 Huntington erosion method were consistently lower (by 2-11 mph) than the projected winds for build condition determined by the hot wire methodology in the Copley Place study. The Final EIR should explain the reasons for this discrepancy. **5.11** In addition, since most of the wind studies were done with a pedestrian bridge link across Harcourt Street, which no longer is included in the project, the final EIR should examine the effect on pedestrian level winds with the elimination of this bridge. **5.12**

On page IV D-4, Table IV D-1 is missing the "less than"/"greater than" symbols. **5.13**

The averages given at the end of Table A10 in the Appendices are different from those shown on Table 3 of the Wind Tunnel Study report, the former indicating that the proposed project will lower winds to a greater extent than the low-build alternative while the latter table indicates the opposite. Which is correct? **5.14**

Construction

This section of the Report should indicate what monitoring will be done by the project proponent to ensure compliance with the mitigation measures that are listed. **5.15** Although similar mitigation measures generally are described in impact reports, they often are not honored in the actual construction of a project. The St. Botolph neighborhood experienced several such problems during the construction of the Copley Place project and need assurances that these will not reoccur with the construction of 116 Huntington Avenue.

In addition to the mitigation measures listed, trucks removing excavate and spoil from the site should be covered in order to prevent spillage on adjacent streets. **5.16**

Water and Sewer

The Boston Water and Sewer Commission has identified the St. Botolph Street area as an area which experiences repeated wet weather sewer backups and as an area particularly sensitive to surcharges. The Final EIR should discuss the potential impact of the additional sewage generated by the 116 Huntington Avenue project on the St. Botolph area sewer system. **5.17**

(5.1) TOPIC: PROJECT AND AREA DESCRIPTION

COMMENT: The Prudential Center development preceded the Urban Renewal Plan, rather than resulting from it as indicated in the Draft EIR.

RESPONSE: Text in this Final EIR has been revised accordingly.

(5.2) TOPIC: DESCRIPTION OF ALTERNATIVES

COMMENT: Explain how parameters (proportion, design, parapet height, etc.) of the Low-Build Alternative were determined.

RESPONSE: Programmatic and design objectives leading to formulation of the Low-Build Alternative are described in Chapter IV B, Visual Quality.

(5.3) TOPIC: TRANSPORTATION

COMMENT: Volumes in Table IV A-1 do not always agree with volumes in Exhibit IV A-3 and IV A-4.

RESPONSE: The existing peak hour traffic volumes presented in Table IV A-1 were initially rounded off to the nearest five vehicles per hour (vph). Several typographical errors were corrected and the revised Table shows the actual traffic volumes measured.

(5.4) TOPIC: TRANSPORTATION

COMMENT: Exhibit IV A-6 does not show Bus Route #68 passing in front of project site. On page IV A-14, second "310" in last paragraph should be "315". On page IV A-27, "work" on top line should be "non-work".

RESPONSE: The omission of Bus Route #68 is corrected as shown in Exhibit IV A-6. The other typographical errors have also been corrected.

(5.5) TOPIC: TRANSPORTATION

COMMENT: Add 420 Boylston Street to the development activity list.

RESPONSE: The redevelopment project at 420 Boylston Street will add 20,455 s.f. of office and retail space to an existing building. The "existing" traffic volumes used in the study were primarily collected in the early 1980s and include the traffic associated with this building prior to its renovation. Because of this fact and because of its location far outside of the study area, new analysis was deemed unnecessary. This comment is addressed in the Probable Project Impacts section of Chapter IV A.

(5.6) TOPIC: TRANSPORTATION

COMMENT: Explain why "Build" condition traffic volumes at Columbus Avenue eastbound at Dartmouth (Exhibit IV A-10) and Huntington Avenue westbound (Exhibit IV A-11) are less than for "No-Build" volumes.

RESPONSE: The build volumes have been corrected on the referenced exhibits.

(5.7) TOPIC: TRANSPORTATION

COMMENT: Explain project-generated increase of traffic volume on Columbus Avenue eastbound and westbound at West Newton Street, given that the Project generates only 172 P.M. peak hour trips.

RESPONSE: The volumes presented were the result of typographical errors. The corrected eastbound through volume is 322 vehicles and the corrected westbound through volume is 520 vehicles. The changes have been made on the appropriate exhibits.

(5.8) TOPIC: TRANSPORTATION

COMMENT: Explain V/C ratio improvement at Columbus Avenue/West Newton Street intersection, given projected increase in Columbus Avenue traffic at this intersection.

RESPONSE: The Volume to Capacity (V/C) ratio for West Newton and Columbus Avenue under No-Build PM peak hour conditions is 0.72, not 0.84 which was presented in the Draft EIR. This was a typographical error.

(5.9) TOPIC: TRANSPORTATION

COMMENT: Describe how making Garrison Street one-way southbound will serve to reduce travel on St. Botolph Street.

RESPONSE: A series of alternatives, including several designating Garrison Street as one-way, are addressed in detail in the Probable Project Impacts section of Chapter IV A.

(5.10) TOPIC: HISTORIC RESOURCES

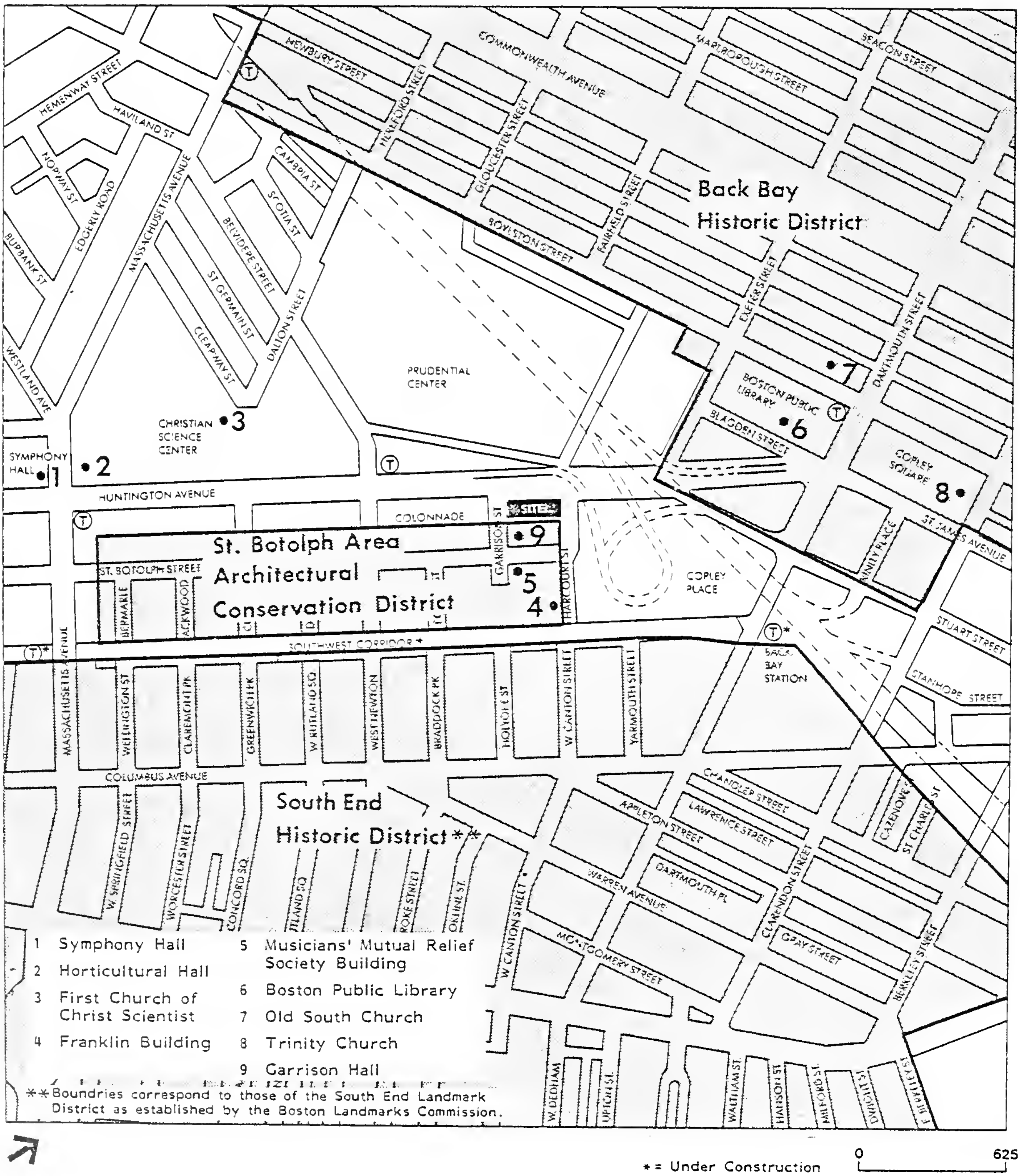
COMMENT: Boundary of South End Historic District (Draft EIR Exhibit IV C-2) is incorrect.

RESPONSE: The exhibit on the following page provides the corrected information concerning the boundaries of the South End Historic District.

(5.11) TOPIC: WIND

COMMENT: Explain why projected wind speeds for existing conditions at five locations are lower for this analysis than previously projected for the Copley Place wind impact study.

SOUTH END HISTORIC DISTRICT BOUNDARIES
(See Comments and Responses - 5.10)



RESPONSE: For the Copley Place development, wind tunnel studies were conducted at a wind tunnel at Bolt, Beranek and Newman, as reported in the Copley Place Environmental Impact Study (EIS) prepared in 1980. The Bolt, Beranek and Newman tunnel was closed in 1983.

The reasons for the discrepancy between the current study and that performed for Copley Place are not clear, however, methodologies have improved in recent years, and this may be one of the reasons for the discrepancy. In general, comparisons of wind tunnel results from the Wright Brothers Facility tend to show a good correlation with results from corresponding stations from other wind tunnels used in studies of buildings in the Boston area.

As reported in the draft EIR for 116 Huntington Avenue, the Project will beneficially affect pedestrian-level wind conditons in the areas closest to the site. Wind conditions at locations more distant from the project site will remain unchanged.

Related discussion is provided in Comment 10.10.

(5.12) TOPIC: WIND

COMMENT: Examine the wind-related effects of removing the pedestrian bridge.

RESPONSE: In the initial proposal for the development at 116 Huntington Avenue, a pedestrian bridge was planned to span Harcourt Street from the Proposed Project to Copley Place. As the building design was refined, the pedestrian bridge was eliminated from the plan.

In general, a bridge affects wind conditions only in locations under the bridge, where wind levels increase. The locations more distant from the bridge, in the wake, would have slightly decreased winds, even as compared to existing conditions, because the bridge obstructs winds.

For the Proposed Project, wind conditions were tested for 16 directions with the bridge and for northwest winds without the bridge. Results at Stations 12, 13,

14, and 16 are pertinent to the bridge. For the bridge location, the most significant wind is the northwest wind since the northeast and southwest winds are obstructed by buildings, and because southeast winds rarely occur in Boston. Accordingly, the discussion below is based on the wind erosion data obtained for northwest winds at the bridge location.

With the bridge in place, winds directly under the bridge are increased noticeably with respect to No-Build conditions and Build conditions without a bridge. To the northwest, toward Station 16, and to the southeast between Stations 14 and 12, along Harcourt Street away from the bridge, the winds are reduced compared to Build conditions without the bridge.

Without the bridge in place, the data shows that the winds under the bridge location would not increase as compared with No-Build conditions. To the northwest toward Station 16 and to the southeast between Stations 14 and 12, along Harcourt Street away from the bridge location, the winds are slightly increased with respect to both No-Build conditions (because of conditions created by area buildings) and Build conditions with the bridge.

(5.13) TOPIC: WIND

COMMENT: Table IV D-1 is missing "less than/greater than" signs.

RESPONSE:

Table IV D-1, Melborne's Criteria for 100-Hour Return Period, from the Draft EIR has been revised to include "less than" and "less than or equal to" signs and is presented below:

TABLE IV D-1
Melbourne's Criteria for 100-Hour Return Period

Category Hourly Comfort Criteria (mph)	Wind Velcoities (U) Average (Uav)
1 Unacceptable and dangerous	27 ≤ Uav
2 Uncomfortable for walking	19 ≤ Uav < 27
3 Comfortable for walking	15 ≤ Uav < 19
4 Comfortable for short periods of standing or sitting	12 ≤ Uav < 15
5 Comfortable for long periods of standing or sitting	Uav < 12

(5.14) TOPIC: WIND

COMMENT: Explain the discrepancy between wind speed averages in Table A-10 in the appendix, and wind speed averages in Table 3 of Wind Tunnel Study report.

RESPONSE: A discrepancy occured in the first version of the Wind Tunnel Study Report, in Table 3, where the values for average velocities for the Proposed Project and the Low-Build Alternative were reversed. The correct values were reported in the Draft EIR, and those values are corrected in the revised Wind Tunnel Study Report.

(5.15) TOPIC: CONSTRUCTION

COMMENT: Describe monitoring plan to assure compliance with proposed mitigation measures.

RESPONSE: The Specifications for the Project will include a special section in the Instructions to Bidders describing the commitments required by the contractors in fulfilling construction-related mitigation measures. The contractors will be required to submit with their bid proposal a "Manual of Operations" outlining the procedures to be instituted by the contractor to ensure that mitigation measures are enforced.

The Manual of Operations will require that the contractor designate one of their full-time, on-site employees as mitigation compliance/monitoring officer. This individual will be responsible for compliance with all mitigation measures.

Weekly meetings will be held among the contractor, key subcontractors, and Proponent to monitor the contractor's progress. Construction mitigation enforcement groundwater conditions as noted in reports to the BRA will be one of the subjects discussed at these meetings.

In addition, the Proponent's "hot-line" telephone number will be established to receive and act upon community concerns regarding the Project.

For traffic, a Transportation Access Plan, to be developed in conjunction with the Boston Transportation Department, will specify construction mitigation measures and will be enforceable by the City.

(5.16) TOPIC: CONSTRUCTION

COMMENT: Trucks carrying excavate should be covered to prevent spillage.

RESPONSE: This requirement will be included in the Project Specifications. The contractor's project superintendent as well as the police detail at the site entrance/exit gate will ensure compliance.

(5.17) TOPIC: WATER AND SEWER

COMMENT: Discuss project impact on area sewer system in regard to local problems with wet weather sewer back-ups and surcharges.

RESPONSE: The area on St. Botolph Street subject to wet weather back-ups and surcharges has been identified by the Boston Water and Sewer Commission in their waste water facilities plan as the area bounded by West Newton Street, the MBTA's Southwest Corridor, Massachusetts Avenue and Huntington Avenue. This area discharges through a system that runs to the West Side Interceptor along Cumberland Street independently from the system collecting the discharge from the Proposed Project. There will be no impact on this system by the Proposed Project.

Boston

Raymond L. Flynn, Mayor

Jan. 7, 1987

Secretary James S. Hoyte
Executive Office of Environmental Affairs
100 Cambridge St.
Boston, MA 02210

ATTN: MEPA Unit

RE: 116 Huntington Ave. Development (Parcel 1) Draft Environmental Impact Report, EOEA #5777

Dear Sec. Hoyte:

This department has reviewed the above DEIR, and would like to make the following comments. Our comments address both the accuracy of the DEIR in assessing the probable impacts of the project and the impacts themselves.

We believe that in some respects the traffic generating potential of a
building of this size may have been underestimated. The most
questionable assumption is that the office workers traveling to the 6.1
building by automobile will do so in a ratio of 1.9 occupants per
vehicle. Although this finding is supported by a survey of the work
force at the old New England Life Company building, a more modest
expectation may be appropriate.

With regard to transit, the assessment of impact upon the different
rapid transit lines fails to distinguish between the separate Green
Lines. Since the Arborway Line is reached at the Prudential Station
and the others at the Copley Station, this difference should be
discussed. Because the numbers of transit patrons involved are small
(49 PM peak hour trips), the disaggregation need not be done by formal
modeling methods, but the text of the report should acknowledge that 6.2
the Green Line has separate components which are distinct at this
location.

The decision to locate the parking garage entrance on the Garrison St.
side of the building is controversial. The proponents argue that this
location would not induce more traffic to use St. Botolph St. than
would a Harcourt St. entrance. This conclusion is counter-intuitive,
even though the traffic volume data seem to indicate that many drivers
do perceive St. Botolph St. as a short-cut with respect to Huntington
Ave. Further documentation would be helpful, such as travel time 6.3
comparisons of St. Botolph St. and Huntington, and demonstrations of
the design and queueing problems that a Harcourt St. entrance would
pose. The mitigation measures section should also discuss ways in 6.4
which traffic could be diverted off of St. Botolph St.

Richard A. Dimino, Commissioner, Traffic and Parking
City of Boston/City Hall Square/Boston, MA 02201

The City of Boston is concerned, as both a policy and an environmental issue, with the shortage of short-term parking spaces downtown, and especially given the tendency of all new developments to provide only for long-term parkers. When the proponents of this project present their Access Plan to the City, they will be asked to discuss ways in which their parking facilities could accommodate some short-term as well as long-term parkers. 6.5

Thank you for the opportunity to comment on this DEIR. We look forward to reviewing the Final EIR, and to working with the proponents on an Access Plan for the purposes of the City's review process.

Sincerely,

Richard A. Dimino
Commissioner

LETTER #6
CITY OF BOSTON - TRAFFIC AND PARKING DEPARTMENT

(6.1) TOPIC: TRANSPORTATION

COMMENT: Vehicle occupancy rate of 1.9 occupants per vehicle may be too high.

RESPONSE: This issue, which was also raised in the Secretary's Certificate on the Draft EIR, is addressed in "Adjustments to Trip Generation Rates" in the Probable Project Impacts section of Chapter IV A.

(6.2) TOPIC: TRANSPORTATION

COMMENT: Distinguish between effects on the separate Green Lines.

RESPONSE: It is recognized that transit ridership for the Proposed 116 Huntington Avenue project on the Green Line will be spread over several different branches, as discussed in the Public Transportation Impacts section of Chapter IV A.

(6.3) TOPIC: TRANSPORTATION

COMMENT: Provide further documentation concerning effects of a Garrison Street, rather than Harcourt Street, garage entrance. Include travel time comparisons of St. Botolph Street and Huntington Avenue, and demonstrations of design and queueing problems that a Harcourt Street entrance would pose.

RESPONSE: This issue is addressed in detail in the Probable Project Impacts section of Chapter IV A.

(6.4) TOPIC: TRANSPORTATION

COMMENT: Mitigation section should discuss measures to divert traffic off St. Botolph Street.

RESPONSE: This issue, including several improvement alternatives, is addressed in the Mitigation Measures section of Chapter IV A.

(6.5) TOPIC: TRANSPORTATION

COMMENT: Access Plan requirements will include discussion of means to accommodate some short-term parkers.

RESPONSE: The Proponent will continue to work with the city to address this issue, which will be discussed in detail in a forthcoming Transportation Access Plan, to be submitted to the Boston Redevelopment Authority and the Boston Transportation Department.

Letter 7

Boston Landmarks Commission

City of Boston
The Environment Department

Boston City Hall/Room 805
Boston, Massachusetts 02201
617/725-3850

January 8, 1987

The Secretary
Executive Office of Environmental Affairs
Leverett Saltonstall Building
100 Cambridge St
Boston, MA 02202

Dear Secretary Hoyte:

The Boston Landmarks Commission staff has reviewed the EIR for 116 Hungtington Ave. in Boston. The section regarding historic resources and potential impacts has been thoroughly and accurately prepared. Should another version be issued, Section
IV C-6 should reflect that the General Court established the 7.1
Back Bay Architectural District in 1966, not the Landmarks Commission.

As the project impacts statement reveals, the major problem of both the original and the alternative designs is the large scale of each and resultant visibility. The gestures of the proposed design of setbacks at the existing cornice lines of Garrison and Harcourt Street seems merely that. For the reasons stated in the report, the alternative design seems
preferable. It relates to the massing of the Hungtington
Street edge, especially next to the Colonnade Hotel, and 7.2
produces a lower structure. In either case, the project will complete and relate to the Huntington Ave. corridor and not to the St. Botoph Area Architectural Conservation District. In eliminating the Huntington Avenue corridor from the boundaries of the Architectural Conservation district as originally petitioned to the Landmarks Commission, expectation of larger scale construction on this site was inherent.

Sincerely,

Judith B. McDonough

Judith B. McDonough
Executive Director
Boston Landmarks Commission
Environment Department

(7.1) TOPIC: HISTORIC RESOURCES

COMMENT: Back Bay Architectural District was established by the General Court, not the Landmarks Commission.

RESPONSE: The Proponent acknowledges this correction.

(7.2) TOPIC: VISUAL QUALITY

COMMENT: BLC prefers the Low-Build Alternative to the Proposed project since it relates to the Colonnade Hotel, and produces a lower structure. In either case, the project will complete and relate to the Huntington Avenue Corridor and not to the St. Botolph Area Architectural Conservation District.

RESPONSE: As described in Chapter IV B, Visual Quality, the Proposed Project has been designed to be compatible with both the Huntington Avenue and St. Botolph Street contexts. The EIR analysis has indicated that although the Low-Build Alternative is somewhat less visible from St. Botolph Street, the Low-Build Alternative is less effective as a transitional element along Huntington Avenue between the height of the Marriott Hotel and the height of the Colonnade Hotel.

Boston Water and
Sewer Commission

10 Post Office Square
Boston, Massachusetts 02109
617-426-6046

January 9, 1987

Secretary James Hoyte
Executive Office of Environmental Affairs
20th floor
100 Cambridge Street
Boston, MA 02202

Attention: MEPA Unit

RE: Parcel 1-116 Huntington Avenue
Draft EIR
(EOEA #5777)

Dear Secretary Hoyte:

The Boston Water and Sewer Commission has reviewed the Draft Environmental Impact Report submitted for the above-referenced project. The following is a summary of our comments:

Page IVG-3: The anticipated wastewater flow is incorrectly stated as 0.20 mgd, actually it should state 0.020 mgd. 8.1

Page IVG-5, Figures IVG-2, IVG-3: The 42-inch main in St. Botolph Street is owned by the Boston Water and Sewer not Mass. Water Resources Authority. 8.2

The low service line in St. Botolph Street is 12" between Garrison Street and Harcourt Street. 8.3

Page IVG-8, Boston Water and Sewer Commission Regulation require recirculation systems for all air condition-ditioning units using more than 7.5 gpm. 8.4

Please contact me if you have any questions regarding the above comments.

Very truly yours,

Charles Button

Charles Button, P.E.
Chief Engineer

(8.1)	TOPIC:	WATER AND SEWER
	COMMENT:	Wastewater flow should be at 0.020 mgd., not 0.20 mgd.
	RESPONSE:	This correction is noted.
(8.2)	TOPIC:	WATER AND SEWER
	COMMENT:	The 42-inch main in St. Botolph Street is owned by BWSC, not MWRA.
	RESPONSE:	This correction is noted.
(8.3)	TOPIC:	WATER AND SEWER
	COMMENT:	The low service line in St. Botolph Street is 12" between Garrison and Harcourt Streets.
	RESPONSE:	This correction is noted.
(8.4)	TOPIC:	WATER AND SEWER
	COMMENT:	BWSC requires recirculation systems for all air conditioners using more than 0.75 gpm.
	RESPONSE:	The Proponent will be submitting information on water use for the proposed air conditioning system (which will meet these requirements) to BWSC as part of the site plan submittal prior to issuance of the Building Permit.

Letter 9

St. Botolph Citizens' Committee, Inc.

January 9, 1987

The Secretary
Executive Office of Environmental Affairs
Leverett Saltonstall Building
100 Cambridge Street
Boston, MA 02202
Attn: MEPA Unit

Dear Mr. Secretary:

We appreciate the opportunity to comment on the Draft EIR (EOEA #5777) pertaining to the site located at 116 Huntington Avenue.

Initially, may I say that after a number of meetings over the past year with Urban Investment and Development Company the St. Botolph Citizens' Committee has been unable to reach a mutually satisfactory agreement as to what size of building is appropriate for the site. The EIR addresses some of our concerns but not to the extent we believe is necessary. Simply stated, the proposed project, at 215' and 278,000 sq ft presents too great an adverse environmental impact on the immediate area to be permitted. In addition, there are other concerns that perhaps fall outside the strict guidelines of the EIR but nevertheless should receive attention in considering what is right for the area and Neighborhood. **9.1**

Our major concerns are as follows:

Height

The proposed building as presented calls for 16 stories at a height of 215'. This height is grossly disproportionate to the buildings within the South End and the St. Botolph neighborhood which include the Colonnade Hotel and the Greenhouse (an apartment building), both fronting on Huntington Avenue, and both approximately 110' in height. The proposed height also is excessive in terms of its impact on the Architectural Conservation District part of the Neighborhood which includes Garrison Hall (an 85' high apartment building) and dozens of brownstones of 45'. The adverse visual impact of 16 stories on these adjacent buildings and the South End can be seen from examining the illustrations on IV B-33 and IV B-37 of the EIR which are much more serious and far reaching than the 12 story alternative which is also referred to in the report. **9.2**

We find the proposed height (215') of the building to be inconsistent with the Interim Planning Overlay District (IPOD) guidelines which call for a height limit of 125-155' for this particular parcel. The EIR makes the point that the parcel is not subject to the Boston Zoning Code but it also states, **9.3**

"the Proponent intends to comply with the goals and objectives of that code." Clearly 215' represents a building that is 40-70% in excess of the IPOD proposals.

Effect on Historical District

The EIR takes the position that the building represents a "transition" between the large scale buildings on Huntington Avenue and the historical district, and the 16 story building offers a better transition than the 12 story (152') building. However, the Report also states, "the scale of the Low-Build is noticeably less, and in this regard results in less of a visual effect upon the setting and character of the district." As a neighborhood we have worked very hard to maintain the visual character of the area. We are in a critical period where a considerable amount of building and rehabing of older buildings is taking place. These additions will result in even more residents, cars, and further impact on public services.

It is our view that 116 Huntington Avenue cannot be reviewed as a single building but should be looked at in the context of the construction impact on the Neighborhood as a whole. There are seven sites within the Neighborhood itself that are either under development or probably will be in the next several years. In addition, the proposed Prudential expansion cannot help but have a major impact on the area in terms of people, traffic and parking.

Any decision regarding the height and mass of 116 Huntington Avenue must **9.4**
take into consideration the current and anticipated development both within and immediately adjacent to the Neighborhood in order to preserve the historical character of the area.

Traffic & Access Drive Location

The overall increase in traffic that will be generated by the proposed building together with the suggested access drive location on Garrison Street are both objectionable. We believe the traffic figures although developed in good faith do not realistically address or attempt to solve an already serious and
overburdened car traffic problem occuring on West Newton and St. Botolph **9.5**
Streets at peak times. Any building, together with additional future buildings, is only going to compound an already critical problem. However, a building of lesser height will result in fewer cars, and help to alleviate the situation.

The access drive to the building fronting on Garrison Street is presented as a problem solving device. Because of the truck congestion caused by the Copley Place entrance on Harcourt Street the EIR suggests the entrance be placed on Garrison Street in order to avoid "operational" problems. These problems have been caused by the initial inadequate planning on the

part of Copley Place. To now shift the burden of handling the car traffic to Garrison Street and into what is an essentially residential neighborhood strikes us as a serious lack of concern for the area. **9.6**

Water & Sewer

The EIR assumes that the additional discharge of approximately 20,000 gallons/day (page IV G-3) will be dumped into the existing 24x30 inch pipe on Garrison Street. This seems to be an incorrect assumption, and although there is promise to study the system "more completely" we urge the full review for a 24x30 drain along Huntington Avenue connecting to the Garrison Street pipe under Huntington Avenue. **9.7**

Construction Mitigation Measures

Although the construction process is reviewed in the Report, it is the position of the SBCC there should be contractual arrangements with UIDC and the general contractor and appropriate subcontractors with financial penalty clauses payable to the SBCC for violation of construction related restrictions. For example: **9.8**

1. Working hour restrictions
2. No truck idling in the vacinity
3. No staging in Public Alley 401
4. No construction related parking in resident spaces
5. Construction deliveries restricted to Huntington Avenue
6. Adequate street cleaning

Violation of these and other guidelines to be established would result in the contractor's forfeiture of $100 per violation to the SBCC.

In connection with the construction process we also recommend that written procedures for insurance claims be drafted in advance and agreed to by the SBCC. **9.9**

Electrical Power

We do not believe the subject of the adequancy of the electrical supply system for the building was discussed in the Report. With the number of building projects in the immediate and surrounding areas we believe this is a matter for review and reporting on. **9.10**

Often times responses to reports of the type we are reviewing can become very detailed, and assume an almost jury type feel and aspect bordering on, "who said what to whom and when." Many of the points presented in the EIR have been very helpful in enabling us to evaluate the project in a more informed light. But we suggest that in addition to the "facts and

figures" there is also the human equation of what is right in a particular situation.

The EIR says, in effect, that the 16 story building as proposed will represent a positive addition to the area, and the negative impacts on the Neighborhood are minimal. Our position is that the building at a height almost double that of any other within the Neighborhood together with a mass of 278,000 sq ft is much too large to represent a positive addition. With the new construction that is already scheduled or will take place within the next few years there will be an almost unconscionable burden on what is essentially 9.11
a residential neighborhood. It will have a direct effect on the quality of live that many of our residents have worked hard to achieve.

We have been told by the BRA that the building is "in the pipeline" because of the agreement struck by the BRA and UIDC over "Tent City." We believe the city owes a responsibility to its residents not to shift negative impacts from one area (Tent City) to another (St. Botolph) because of the political expendiency of the situation. The building is obviously in the planning stage but it has certainly not reached the stage where a decision cannot be made that will positively affect the residents and others who live and work in the neighborhood and area.

We urge your rejection of the proposal for a 16 story building, and recommend the 12 story alternative be a subject for further discussion.

Thank you for your consideration and attention to our position.

Cordially,

Libby Smith

Libby Smith
President

LS/ccw

CC Rudy Umscheid (UIDC)
Stephen Coyle (BRA)
Mitchell Fishman (BRA)
Don Gillis (Mayor's Office)
Ed Burke (Mayor's Office)
David Scondras
James Kelly
Bob Kaye (SOM)

Messrs. Farrell, Walsh, Flaherty, Jones & Donlan

LETTER #9
ST. BOTOLPH CITIZENS' COMMITTEE, INC.

(9.1) TOPIC: MISCELLANEOUS

COMMENT: Project impacts are too great to be permitted.

RESPONSE: Analysis presented in the Draft EIR and supplemented in this Final EIR indicates that neither the Proposed Project nor Low-Build Alternative will result in environmental effects which cannot be adequately mitigated using measures developed during the project design process and during the EIR preparation process. These measures are described in Chapter V of this Final EIR.

(9.2) TOPIC: VISUAL QUALITY

COMMENT: Project height is disproportionate to the South End, the St. Botolph Neighborhood and the Architectural Conservation District.

RESPONSE: The Proposed Project is located adjacent to the St. Botolph Historic District, and several blocks away from the South End Historic District, and is therefore not subject to the controls of either District. Rather, the Proposed Project is located along the Huntington Avenue corridor which, as described in Chapter IV B of this Final EIR, is characterized by large scale development constructed since the 1960's. Analysis presented in the Visual Quality chapters of the Draft EIR and this Final EIR indicates that although the Proposed Project is considerably larger than that of nearby Nineteenth Century development, its massing, detailing and materials respond sensitively to these older low-rise buildings. In addition, the scale, height and materials of the Proposed Project relate to its Huntington Avenue context of modern high rise development.

(9.3) TOPIC: VISUAL QUALITY

COMMENT: Project height is inconsistent with the IPOD guidelines.

RESPONSE: This issue is fully discussed in Chapter IV B, Visual Quality. Briefly, if approved by the BRA and Boston Zoning Commission, the proposed Downtown IPOD would set height standards of 125' to 155' for the district in

which the site is located. These heights are standards, not limits. Projects which propose to exceed these standards, but which are substantially consistent with IPOD requirements, can be granted an interim planning permit by the Board of Appeal. The Proposed Project and Low-Build Alternative are 200' and 152' in height, respectively. It is anticipated that this project will be exempt from the IPOD if and when adopted, by virtue of an exemption applicable to numerous projects which are currently the subject of BRA review and approval.

(9.4) TOPIC: HISTORIC RESOURCES

COMMENT: In order to preserve the area's historic character, height and massing decisions must consider other current and anticipated development in the St. Botolph Neighborhood.

RESPONSE: The Proposed Project is located adjacent to the St. Botolph Historic District, and several blocks away from the South End Historic District, and is therefore not subject to the controls of either District. Rather, the Proposed Project is located along the Huntington Avenue corridor which, as described in Chapter IV B of this Final EIR, is characterized by large scale development constructed since the 1960's. Analysis presented in the Visual Quality chapters of the Draft EIR and this Final EIR indicates that although the Proposed Project is considerably larger than that of nearby Nineteenth Century development, its massing, detailing and materials respond sensitively to these older low-rise buildings. In addition, the scale, height and materials of the Proposed Project relate to its Huntington Avenue context of modern high rise development.

(9.5) TOPIC: TRANSPORTATION

COMMENT: Increase in traffic and location of garage entrance are objectionable. However, a smaller building of lesser height would help alleviate the situation.

RESPONSE: Issues pertaining to the garage entrance location are discussed in Chapter IV A, Transportation. Effects which would be associated with a smaller building of lesser height are discussed in this EIR in evaluation of the Low-Build Alternative.

(9.6) TOPIC: TRANSPORTATION

COMMENT: Operational problems avoided by using Garrison Street for vehicular access reflect earlier inadequate planning by the Proponent. Shifting traffic burden to Garrison Street reflects lack of concern for the area.

RESPONSE: The Proponent is committed to mitigating the traffic effects of the Proposed Project, in particular, the compatibility of the Garrison Street access with the neighborhood. Considerable new analysis of the Garrison Street access is discussed in the Probable Project Impacts section of Chapter IV A.

(9.7) TOPIC: WATER AND SEWER

COMMENT: Assumption that project sewage will flow into existing Garrison Street drain seems to be incorrect. Review need for a 24X30 drain along Huntington Avenue, connecting to the Garrison Street drain.

RESPONSE: The preliminary investigtions for this project indicate that the sanitary discharge will be directly to the Garrison Street sewer system. If, during the design process, it is found that the sewage discharge must be routed toward Huntington Avenue, a new system will be installed by the Proponent (in Huntington Avenue), subject to review and approval by BWSC, to carry the discharge to the Garrison Street system.

(9.8) TOPIC: CONSTRUCTION

COMMENT: Establish a contract between the Proponent and contractors/subcontractors specifying financial penalties for violation of construction-related restrictions.

RESPONSE: If non-compliance occurs by subcontractors, the General Contractor/Construction Manager, after ample notice, will perform the mitigation work with its own forces. If a subcontractor continues a pattern of non-compliance, the subcontractor will be dismissed from work and another subcontractor substituted.

(9.9) TOPIC: CONSTRUCTION

COMMENT: Establish insurance claim procedures, agreed to by St. Botolph's Citizen Committee, and put them in writing in advance of construction.

RESPONSE: The Proponent carries broad insurance coverage which takes into consideration its responsibilities for aspects of possible concern in the development of its properties. This coverage includes Comprehensive General Liability coverage which offers the best possible insurance in event of damages as a result of the Proposed Project. This protection is carried with limits in excess of one million dollars and is provided by financially sound insurance carriers chosen for their longevity and excellent service records to their "clients" and claimants. Local insurance carrier personnel would be used to facilitate the investigation and adjustment of incidents arising from concerns regarding damages incurred within the community.

Additionally, contractors and subcontractors, by contractual obligation, will be required to carry liability insurance for their activites while working on the development.

The insurance process will be part of the agenda at the periodic meetings with the community, which will be arranged by the Proponent. In addition, the "hot line" telephone contact between the Community and the Proponent will be a vital link in the communication chain to facilitate prompt response on insurance matters.

(9.10) TOPIC: MISCELLANEOUS

COMMENT: Assess adequacy of the electrical supply system.

RESPONSE: Analysis of the area's electrical supply system is beyond the scope of this EIR process.

(9.11) TOPIC: MISCELLANEOUS

COMMENT: Project would burden the area's residential quality of life, and would shift impacts from the Tent City site to the St. Botolph Street area.

RESPONSE: The Tent City Project has already been the subject of an Environmental Impact Report (EOEA #5406). This 116 Huntington Avenue EIR has taken into consideration the assumptions and analyses presented in the Tent City EIR.

Letter 10

January 9, 1987

The Secretary
Executive Office of Environmental Affairs
Leverett Saltonstall Building
100 Cambridge Street
Boston, MA 02202

Attention: MEPA Unit

RE: Draft EIR #EOEA-5772 7
116 Huntington Avenue
Boston, MA

Gentlemen:

I am a resident of St. Botolph Street and have been a member of the Committee since September, which is reviewing the project and is working with UDIC, SOM and CBT. I fully back the letter from the St. Botolph Street Citizen's Committee in response to the Draft EIR of this project, but would like to further explain my interpretation of the events as they have occurred and also the information portrayed within the Draft EIR.

The many sessions that we had with SOM were of little value in working out solutions to the project. No floor plans, elevations or site plans were given to us for our review during this period. Very few of our recommendations were incorporated in the recommendations included in the Draft EIR, and the meetings with the BRA, City of Boston Mayor's Office and UDIC were fruitless since the time of the proposal of the sixteen-story building in September. As an architect who has dealt with many cities and towns in the Commonwealth, I find it horrifying to think that a developer, along with the City of Boston and the BRA, can go as far as they have for such a major variance without any significant community in-put until it is almost too late. It becomes obvious as to why the citizens' outcry has occurred with the New England Life project, and it is a shame such projects have to get to near completion in its proposal before authorities recognize the neighborhood voice. It appears that this project is going exactly the direction of the New England Life project for the following reasons: 10.1

UDIC has stated it had previously received approval for use of this property in connection with the development of Copley Place, but has not substantiated it with documents. 10.2

UDIC, in a deal with the City, has been granted a $10 million Use Variance on this property for repayment for the construction of the Tent City garage.

The $10 million repayment, unfortunately, has been crammed in its entirety into one very small site instead of being dispersed to many different sites.

The BRA has, at the two previous meetings of all parties, verbally stated that it has not formally approved the project but has recommended to the owners to proceed with the design development and Draft EIR for a project of this size, which indicates a granting of approval. The BRA has made no negative comments--only defense for the project in all meetings.

The Mayor's Office has done little, if anything, to help the neighborhood out with its dissatisfaction of the project. The Mayor's Office, similar to that of the BRA, has indirectly granted approval and continually defended the project.

The BRA has coincidentally cancelled hearings for approval for the proposed Huntington Avenue IPOD which would require buildings to be built along Huntington Avenue to 125' maximum height with a provision for a special permit to 150'. It allows for no authorization for the construction of buildings in excess of 150'. This project stands 200' tall. Hearings have been continually cancelled on this matter, again coincidentally, since the neighborhood has been vocal in its disagreement with the development. I sometimes wonder why all these coincidences are taking place?

UDIC, at the last meeting of January 5, 1987, was questioned directly if it would consider any reduction in the massing, square footage and height of the project and the response was an emphatic "NO" unless financial concessions were made for the City of Boston and the BRA.

When urban planning discussions were taking place with regard to the size of the project, the developers always related the building to the Marriott and the Colonnade and carefully eliminated its massing in relation to Garrison Hall and St. Botolph Street.

The proposed project is being built over the City sidewalk to allow for the maximum square footage. Rarely has it been seen in present day planning that cities give up public pedestrian space for the purpose of a financial gain in private development. The taking of public air rights is far beyond the intended legal scope of the definition of the word "variance".

> When the BRA was questioned, that if this project were approved and the proposed 125' IPOD were then put in place, that the 110' Colonnade or other similar Huntington Avenue buildings could seek similar 200' additions in court? The answer was "Probably." Then why jeopardize the rest of Huntington Avenue?

These items, in my own interpretation, indicate a development with no good intentions for the people of the City of Boston and its neighborhoods but only for the benefit of a private financial institution that is being backed by both the BRA and the Mayor's Office.

If one reviews the Summary of Environmental Issues in the draft EIR, he will find tremendous inconsistencies. The following represents either those thoughts or my personal areas of concern:

TRAFFIC AND PARKING

It has been requested through all meetings that all access to and from the site should be from Harcourt Street, which is fully controlled on all sides by UDIC, and that the residential area of St. Botolph and Garrison Street should not bear any additional burden of traffic. The summary indicates that Harcourt Street would be impractical, but if one looks to the traffic count in the Appendix, he will find that Harcourt Street has a peak hour traffic count of 22 cars per hour and Garrison Street has a peak hour traffic count of 213 cars per hour which would leave one to believe that Harcourt Street would be better for vehicle access. Additionally, UDIC has placed upon itself by improperly designing "proper" loading facilities for the Marriott and the Westin which have tied up traffic on Huntington Avenue and as the report indicates, tied up traffic on Harcourt Street. Additionally, they are only providing two loading docks 10.3
for a building of 278,000 square feet, including retail, which defies all the laws of sanity. Why should the residents in the adjacent neighborhood bear the impact and the continuous lack of proper planning by the developer?

For these reasons and reasons of proper logical site planning, 10.4
all access to and from the building should occur off of Harcourt Street. If this means a signficant reduction of retail space, so be it.

VISUAL QUALITY

"The aesthetic effect of introducing moderate overall scale of the project at the edge of the low-rise St. Botolph District is expected to be minimal due to the presence of numerous high-rise buildings....", from Draft EIR. If this isn't an inconsistent statement, then I have never seen one. Drawings on IVB33, 29 10.5
and 17 specifically show this sad relationship of heights. The transition of the proposed project on to Garrison Street is shown on B10 and B11, with B11 being far superior. Continuously throughout the report it states "the low building alternative has not been designed."

But, in its drawings, it criticizes that the low building alternative as a poor proposal of massing and a poor proposal of cornice height relative to Garrison Hall. Why can't the cornice height equal Garrison Hall as it does in the high rise alternative? I thought it wasn't designed? 10.6

It is extremely deceiving the way the building has been presented because it doesn't clearly show, either with perspecives, plans or elevations that 25% of the building is hanging over the sidewalk in the residential end of the City. This may be fine for use at Center Plaza or on the shopping district of Washington Street, but a cancerous growth of the commercial district of the City is now spreading into the neighborhoods. 10.7

In summary, the visual quality of the building and its relationship to the neighborhood and to the rest of Huntington Avenue is poor. A twelve-story alternative set back to the owner's property lines would be a better solution. The mass projecting over the sidewalk appears over-weight and over-scaled for the size of the property and its relationship to Huntington Avenue. Even over-crowded New York City does not rely on such drastic measures as to build a new large office building directly at the curb line of a busy street. 10.8

HISTORIC RESOURCES

"The massing in details of the proposed project have been designed to respond sympathetically to the historic context of the neighborhood area.", from Draft EIR. he aesthetic quality of the building is quite nice for a site significantly larger. Its relationship to Garrison Hall and to the three-story brick bow fronts that it abutts on St. Botolph Street, however, is disgraceful. "Sympathetically" is used insincerely. A twelve-story alternative with its traffic pattern remaining on Huntington Avenue and being built only to its property lines would be "sympathetic" to the historic neighborhood. 10.9

WIND

I must rely on other professionals to evaluate wind for the proposed project, but it is disheartening that in the summary program on page I-6 it states that the pedestrian level comfort is acceptable in the general area except for the Westin Hotel and the Marriott Hotel which are the adjacent developments constructed and owned by UDIC. How was such careless planning allowed to have happened, or were the wind tunnel tests as accurate as the ones shown, projecting no change to the wind in the area? 10.10

SHADOW

It is hard to believe that on summary sheet I-6 it indicated that a building of sixteen stories, 200' in height, has little shadow....From Draft EIR, "Findings indicate that both alternatives result in small amounts of new shadow in the vicinity of the new site." All one has to do is read in Section IVE and look at the projected shadow conditions to find that the shadow from this building will cross entirely Huntington Avenue and project on to the front lawn of the apartment complex some 500' away. Do the people writing this report think that the readers are ignorant or won't take the time to read the report? 10.11

Copley Place has created such a shadow in such a large area that it was probably assumed crossing off another large portion of Huntington Avenue from any sunlight would be acceptable.

GEOLOGY AND GROUND WATER

I have to agree with this part of the report in that it appears to be wisely thought out for how to properly engineer this type of building for these conditions.

WATER AND SEWER

Being one of the residents of the City of Boston that found his residence under a foot of sewerage during the storm in August of 1985, I find it hard to believe that this section states that the system has sufficient capacity to handle the project. I am unaware of any improvements that have been made. It would appear that 20,000 gallons of sewerage could be a large impact on St. Botolph Street areas if such an occurrence happened again. Is the Boston Water and Sewer Commission guaranteeing that this is not to happen again nor that this building will contribute to this situation, or will corrective measures be taken by the BWSC before occupancy of this building? 10.12

CONSTRUCTION

This part of the report seems fairly concise. Mitigation measures include those that the committee had recommended to the owner.

Assuming that any interpretation as stated among UDIC, BRA and the City of Boston is untrue, and I will assume it to be contested and denied, and assuming that the report, in my opinion, was inconsistent to the facts which will be denied; the undisguised facts themselves stand alone in proving that the proposed project is grosly too large for the site.

It is interesting that the Boston Society of Architects has been omitted from the list of people receiving a copy of this report since it is generally provided such information as a courtesy for review prior to approval.

Sincerely,

Thomas P. Sokol

Thomas P. Sokol
Architect
142 St. Botolph Street
Boston, MA 02115

TPS:kjm

LETTER #10
THOMAS P. SOKOL

(10.1) TOPIC: MISCELLANEOUS

COMMENT: Community contacts with SOM, BRA, Mayor's office and UIDC were of little value.

RESPONSE: Community contact with the groups cited has resulted in substantial change to the proposed development. For example, the project was initially proposed as a 31-story structure, but is now proposed as a 16-story structure. The facade of the building now reflects a variety of community objectives concerning design, detailing, and materials. A wide range of technical analyses were conducted during this EIR process specifically in response to, and to the specification of, local community representatives. In addition, mitigation measures committed to by the Proponent addressing issues of visual quality, transportation, and construction represent a response to specific requests made by the community during frequent meetings with the Proponent.

(10.2) TOPIC: MISCELLANEOUS

COMMENT: Various concerns regarding development process to-date:

a. No documentation of authority to develop site.
b. City's repayment to UIDC is being crammed into one small site.
c. BRA and Mayor's Office have given indirect project approval.
d. IPOD hearings have been cancelled.
e. UIDC is unwilling to reduce project size.
f. Project's relationship to Garrison Hall and St. Botolph Street has not been addressed.
g. Arcade over sidewalk is a taking of public air rights.
h. Other Huntington Avenue projects will seek 200 foot heights.

RESPONSE:

a. As described more fully in Section II of this Final EIR, the Project Proponent received tentative developer designation from the BRA in December 1985. In addition, the Project Proponent has the legal authority to develop the project site pursuant to its existing air-rights lease with the

Massachusetts Turnpike Authority, and pursuant to a Memorandum of Understanding with the BRA. These documents are also described in more detail in Chapter II.

b. The Proposed Project stands on its own, and the density of the development on that site will be determined pursuant to normal public processes. The Memorandum of Understanding in no way requires the City to approve any particular development of the site.

c. The Proponent has involved the neighborhood as well as the Mayor's office and BRA in a variety of discussions concerning the Proposed Project. The BRA and the Mayor's office have been working with the Proponent in this regard, which is appropriate under the circumstances.

d. The Proponent has no information on this matter.

e. The Proponent has repeatedly stated that the Proposed Project, reduced from the original 31-story proposal, represents the minimum program needed to economically justify the project's construction and to support the costs of high quality design and materials.

f. The Draft EIR and this Final EIR have provided extensive analysis, discussion, and visual depiction of the project's relationship to Garrison Hall and St. Botolph Street.

g. The arcade will be constructed only with the approval of the city's Public Improvement Commission, as described in Chapter IV B, Visual Quality in this Final EIR.

h. All development proposals for Huntington Avenue will be subject to current zoning regulations including the requirements of the proposed Interim Planning Overlay District, when implemented.

(10.3) TOPIC: TRANSPORTATION

COMMENT: Provision of only two loading docks is not sufficient, and will cause adverse impacts on neighborhood.

RESPONSE: A detailed discussion of loading requirements for delivery vehicles is presented in the Probable Project Impacts section of Chapter IV A. The two proposed docks will be adequate to service this building.

(10.4) TOPIC: TRANSPORTATION

COMMENT: All vehicular access to and from the building should occur off of Harcourt Street.

RESPONSE: Several comments address this point, and an extensive description of the vehicular access issues is provided in the Probable Project Impacts section of Chapter IV A.

(10.5) TOPIC: VISUAL QUALITY

COMMENT: The Low-Build Alternative provides a better transition to Garrison Street.

RESPONSE: As discussed in Chapter IV B of both the Draft EIR and this Final EIR, the issue of which alternative provides a better transition between high-rise and low-rise development in the area has been evaluated in terms of the height of 19th century structures such as the 80-foot high Garrison Hall as well as nearby modern high structures such as the 385-foot high Marriott Hotel. This evaluation has concluded that the Proposed Project responds to both of these development contexts, and is thus effective as a transitional element.

(10.6) TOPIC: VISUAL QUALITY

COMMENT: Why can't the cornice of the Low-Build Alternative align with that of Garrison Hall.

RESPONSE: This issue is discussed in detail in Chapter IV B, Visual Quality. Briefly, the reason for the cornice height concerns the need to maximize building program provided within the height constraints represented by the Low-Build Alternative.

(10.7) TOPIC: VISUAL QUALITY

COMMENT: Views should show project's overhang over sidewalk.

RESPONSE: As requested, Exhibits IV B-2 and IV B-3 depict the project's arcade element over the Huntington Avenue sidewalk as seen from both Huntington Avenue and from Garrison Street.

(10.8) TOPIC: VISUAL QUALITY

COMMENT: A twelve-story building, set back to the property line is preferable.

RESPONSE: Such a building has not been proposed by the Proponent and is not considered economically or functionally feasible by the Proponent.

(10.9) TOPIC: HISTORIC RESOURCES

COMMENT: The massing and details of the Proposed Project are not sympathetic to Garrison Hall or the St. Botolph Neighborhood.

RESPONSE: Analysis of the relationship of the Proposed Project and Low-Build Alternative to the context of existing 19th century architecture within the St. Botolph neighborhood is discussed in Chapter IV B, Visual Quality.

(10.10) TOPIC: WIND

COMMENT: Did wind studies for the Westin and Marriott Hotels accurately predict current wind problems at these locations?

RESPONSE: For the Copley Place development, wind tunnel studies were conducted at a wind tunnel at Bolt, Beranek and Newman, as reported in the Copley Place Environmental Impact Study (EIS) prepared in 1980. The Bolt, Beranek and Newman tunnel was closed in 1983.

In the intervening years between the testing of wind conditions for Copley Place and the testing conducted for the Proposed Project, test methodologies have been improved. This may be the reason for the differences in the results of the two tests. It is difficult to judge the accuracy of the wind tunnel used for the Copley Place development. However, recent comparisons of the Wright Brothers Facility shows a good correlation with results from corresponding stations tested by other tunnels used in studies of buildings in the Boston area.

(10.11) TOPIC: SHADOW

COMMENT: Shadow effect of the project is greater than described in the Summary chapter.

RESPONSE: The summary section of this Final EIR (Chapter I) has been modified to address this concern. The shadow analysis presented in the Draft EIR indicates that the Project's incremental effect on receptor areas such as residences, historic areas, and public open space is minimal. Although both alternatives result in new shadow in the vicinity of the site, neither alternative casts new shadow on residences or historic structures in the St. Botolph neighborhood. Differences between shadow effects of the Proposed Project and those of the Low-Build Alternative are minimal.

(10.12) TOPIC: WATER AND SEWER

COMMENT: Project-generated sewage could represent a large impact on the St. Botolph Street area. Will BWSC guarantee prevention of back-ups, as have occurred in the past, or will they take corrective measures prior to occupancy of this building?

RESPONSE: The area on St. Botolph Street subject to wet weather back-ups and surcharges has been identified by the Boston Water and Sewer Commission in their waste water facilities plan as the area bounded by West Newton Street, the MBTA's Southwest Corridor, Massachusetts Avenue and Huntington Avenue. This area discharges through a system that runs to the West Side Interceptor along Cumberland Street independently from the system collecting the discharge from the proposed development. There will be no impact on this system by the proposed project. It is understood that BWSC is presently investigating mitigation measures to alleviate existing problems.

Letter 11

MRS. G. W. HUMPHREY
16 HARCOURT STREET
BOSTON, MA 02116
617-262-5449

Mr. James S. Hoyte
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

January 19,1987

Dear Mr. Hoyte,

Enclosed, for your information, is a copy of the letter I have written to Mr. Umscheid explaining my reasons for not joining other trustees of the Copley Place Cooperative Association in their letter endorsing U.I.D.C.'s proposal for a building at 116 Huntington Avenue.

I feel very strongly that this is just too much building for this relatively small parcel of land.

Sincerely,

Josephine R. Humphrey

Josephine R. Humphrey

Member, Board of Directors,
Copley Place Cooperaticve Association

MRS. G. W. HUMPHREY
16 HARCOURT STREET
BOSTON, MA 02116
617-262-5449

Mr. Rudolph K. Umscheid
1 Copley Place, Suite 600
Boston, MA 02116

January 19,1987

Dear Rudy,

Thank you for the opportunity last Tuesday to see plans for the proposed building at 116 Huntington Avenue. I have read the Skidmore report with great interest, as well, and I appreciate U.I.D.C.'s apparent concern for the project's environmental impact.

I was unwilling to participate in a letter of endorsement because I feel that the plan violates accepted zoning standards relating to light and air; it not only eliminates setbacks but exacerbates the problem with encroaching arcades (which I would not consider a safe place to walk at night). 11.1

Provisions for truck and automobile access are also a concern. After a year's residence at 16 Harcourt Street I am dismayed by the lack of an effective solution to the problem of through traffic over the curbs and brick sidewalks at both ends of the Residences. This unsatisfactory situation has not encouraged me to believe that I can depend on U.I.D.C. to concern itself with the interests of local residents, but I very much hope that the use of this street will be appropriately regulated before Plot 1A is developed. 11.2

I hope, too, that U.I.D.C. and its creation, the Copley Place Cooperative Association, will always be able to work together amicably, and share mutually beneficial goals.

Recognizing the importance of the proposed building in influencing the character of the neighborhood and its future development, I shall welcome any opportunity which may be offered for further discussion.

Sincerely,

Josephine R. Humphrey

Josephine R. Humphrey

CC: Mr. James S. Hoyte
Mr. Stephen Coyle

LETTER #11
JOSEPHINE R. HUMPHREY

(11.1) TOPIC: VISUAL QUALITY

COMMENT: Proposed project violates zoning standards for light and air by eliminating setbacks and creating an arcade.

RESPONSE: The relationship of the Proposed Project to current and anticipated zoning in the site area is discussed in Chapter IV B, Visual Quality. This discussion also addresses the public approval process required for construction of the proposed pedestrian arcade.

(11.2) TOPIC: TRANSPORTATION

COMMENT: Problem of through traffic over Harcourt Street curb should be addressed prior to development of this project.

RESPONSE: The issue of the Harcourt Street barrier is described in the Mitigation section of Chapter IV A under the heading "Vehicles Crossing the Harcourt Street Island".

January 16, 1987

James S. Hoyte, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston
Massachusetts 02202

Dear Sir:

We are writing to you in order to endorse the proposed construction of the sixteen-story office building at 116 Huntington Avenue being proposed by Urban Investment and Development Company. We are residents of Harcourt Street, bordering the development itself, and, as such, most directly impacted by the project.

On a general level, we view the proposed development on Huntington Avenue as an appropriate use of a commercial lot on a commercial thoroughfare. As residents of an historical district bordering that commercial thoroughfare, we are impressed by the architectural design of the building, with its use of brick and concrete, in keeping with both the architecture of the South End itself, as well as with existing commercial buildings along Huntington. We view the building's size of sixteen stories as providing a logical step-down from the Marriott to the Colonnade Hotel. We believe that the construction will not cause any negative effects such as blocking sunlight for any resident, and in fact will cut down the wind tunnel effect that blows from Huntington down Harcourt Street.

On a more individual level, our major concern with the development centers around the traffic problems created in the Huntington, St. Botolph, Harcourt Street area. The developers have met with us, and appear to be sensitive to the issues. Of particular consequence for us is a small area of raised sidewalk, triangular in shape, that protects Harcourt Street from direct access by Huntington Avenue. The triangle presently separates the service area of the Marriott Hotel, with access on Huntington Avenue, from the residential community of Harcourt Street. We have had innumerable problems in the past with both trucks and cars blatantly ignoring the triangle of land and crossing over the sidewalk in an attempt to shortcut access into the community. This route has never been, nor was it ever intended to be, an open route; the sidewalks are clearly intended to stop traffic. The developers have listened to our concern and appear to be willing to help us solve the problem. 12.1

Most importantly, Urban Investment and Development Company are the very people who developed the Residences at Copley Place, where we presently live. They are a responsible organization and have proven themselves in terms of quality management. They are local, on-site people who are receptive to, and bend over backwards to work with, all people involved and to provide the highest

quality development. For this reason, most especially, we are pleased to have the opportunity to endorse the project at 116 Huntington.

Thank you very much.

Sincerely,

Jo Ann Toledano
Lorrey Bianchi /jss

JoAnn Toledano
Lorrey Bianchi
Members of the Board of Directors, The Residences at Copley Place

cc: Stephen Coyle, Director, BRA
Rudi Umscheid, UIDC

LETTER #12
MEMBERS OF THE BOARD OF DIRECTORS, THE RESIDENCES AT COPLEY PLACE

(12.1)	TOPIC:	TRANSPORTATION
	COMMENT:	Drivers cross over the triangular traffic barrier on Harcourt Street.
	RESPONSE:	The issue of the Harcourt Street barrier is described in the Mitigation section of Chapter IV A under the heading "Vehicles Crossing the Harcourt Street Island".

The First Church of Christ, Scientist

Office of the Treasurer

January 15, 1987

James S. Hoyte
Secretary
Executive Offices of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

Re: 116 Huntington Ave.

We have been requested by Urban Investment and Development Company to review their plans and to send our comments to you.

We have reviewed their plans and interpose no objection to this development. 13.1

Sincerely,

E. W. Gutelius, Jr.
Real Estate Manager

cc: Stephen Coyle, Director, Boston Redevelopment Authority
Rudy Umscheid

LETTER #13
THE FIRST CHURCH OF CHRIST, SCIENTIST

(13.1) TOPIC: MISCELLANEOUS

COMMENT: No objection to proposed development.

RESPONSE: This comment is acknowledged.

GOULSTON & STORRS
A PROFESSIONAL CORPORATION
COUNSELLORS AT LAW
400 ATLANTIC AVENUE
BOSTON, MASSACHUSETTS 02210-2206
617/482-1776

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TELEX 94-0428 GOULSTORRS BSN
BOSTON TELECOPY 617/482-8131
WALTHAM TELECOPY 617/894-1395

January 16, 1987

BY HAND

Mr. Ronald M. Druker
The Druker Company
50 Federal Street, Suite 700
Boston, Massachusetts 02110

Re: 116 Huntington Avenue - Boston, Massachusetts

Dear Ron:

Enclosed for your signature is the letter to James Hoyte which I read to you over the phone this morning. I have instructed the messenger to wait while you sign the enclosure, and to deliver the signed original to Mr. Hoyte.

I have also enclosed envelopes addressed to those individuals who should receive photocopies of the signed letter. These copies should be hand delivered today as well.

Please forward a photocopy of the letter to me, and I will see to it that it gets distributed to the appropriate attorneys in our office.

Sincerely,

Phillip G. Levy

PGL/vs
Enclosures
cc: Steven S. Fischman, Esq.
Alan W. Rottenberg, Esq.
Atty. Marilyn L. Sticklor

THE COLONNADE TRUST
c/o The Druker Company
50 Federal Street
Suite 700
Boston, Massachusetts 02110

January 16, 1987

BY HAND

Mr. James S. Hoyte
Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

Re: Parcel 1 - Fenway Urban Renewal District
EOEA #5777
Comments to Draft EIR

Dear Secretary Hoyte:

This letter is being submitted on behalf of the Trustees of The Colonnade Trust, the owners of The Colonnade Hotel, as a comment to the draft EIR for Parcel 1 submitted by Urban Investment and Development Co. ("UIDC") for the 116 Huntington Avenue project.

The Trustees view the 116 Huntington Avenue project as being undertaken by its proponent as a part of the general development of the Huntington Avenue/Garrison Street area in further implementation of the Fenway Urban Renewal District Plan. The Trustees anticipate participating in such further development of the area by expansion of the existing Colonnade Hotel building. Such expansion is anticipated to consist of construction of a 16 story building of approximately 200,000 square feet to be located on vacant land owned by the Trustees at the corner of Garrison Street and Huntington Avenue abutting the UIDC project site. The Trustees have heretofore entered into preliminary discussions with the City of Boston concerning such further development, and anticipate receiving the approval of the City for such project.

Accordingly, the Trustees note their support of the proposed UIDC project of 16 stories, as relating to the modern large-scale development along Huntington Avenue. The Trustees would request, however, that analysis of the UIDC project as relating to the modern large-scale development along

Huntington Avenue anticipate the existence of the Colonnade expansion project described above in the surrounding context of the UIDC project and that the UIDC project be approved on such basis. 14.1

Sincerely,

TRUSTEES OF THE COLONNADE TRUST

By Ronald M. Druker
Ronald M. Druker, Trustee

cc: Mr. Stephen Coyle
Director
Boston Redevelopment Authority
City Hall
One City Hall Square - 9th Floor
Boston, Massachusetts 02201

Mr. Paul L. McCann
Executive Assistant
Boston Redevelopment Authority
City Hall
One City Hall Square - 9th Floor
Boston, Massachusetts 02201

Mr. Rudy K. Umscheid
Senior Vice President
Urban Investment and Development Co.
One Copley Place - Suite 600
Boston, Massachusetts 02116

LETTER #14
THE COLONNADE TRUST

(14.1) TOPIC: MISCELLANEOUS

COMMENT: Analysis of the 116 Huntington Avenue Project should take into consideration the fact that the Colonnade Hotel is expecting to build a 16-story, 200,000 square foot building at the corner of Garrison Street and Huntington Avenue.

RESPONSE: The listing of anticipated background development projects included in this analysis is provided in Table IV A-12 of the Draft EIR, and is the result of consultation with staff of the Boston Redevelopment Authority. This listing is comprised of projects for which completion may occur prior to 1989, the scheduled completion date of the 116 Huntington Avenue Project. The project referenced in this comment is not anticipated to be completed by that date.

BOSTON PRESERVATION ALLIANCE

January 16, 1987

Secretary James Hoyte
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RE: 116 Huntington Avenue, EOEA #5777 EIR

Dear Secretary Hoyte:

The Boston Preservation Alliance wishes to comment on the draft Environment Impact Report for 116 Huntington Avenue. We have several concerns regarding this proposal.

The Alliance feels strongly that existing open sidewalk should be retained, as was intended in the original street layout for the Back Bay. We also feel that pedestrians should not be denied continued visual access to light. The project also needs to have a coherent visual relationship with the Colonade Hotel and the adjacent Marriott Hotel, Coply Place which can be accomplished with sympathetic materials. 15.1 15.2

We ask that our concerns be fully considered in developing the final Environmental Impact Report.

Respectfully submitted,
The Boston Preservation Alliance

By: Susan Park

Susan Park, Chairman

Old City Hall, 45 School Street, Boston, Massachusetts 02108 Telephone 617 367-2458

LETTER #15
BOSTON PRESERVATION ALLIANCE

(15.1)	TOPIC:	VISUAL QUALITY/SHADOW
	COMMENT:	Open sidewalk should be retained as was intended in the original street layout for the Back Bay.
	RESPONSE:	The programmatic and urban design objectives relating to the proposed pedestrian arcade, as well as the public approval process required for its construction, are described in Chapter IV B, Visual Quality. It should be noted that the project area was originally filled and developed by a separate entity from the Back Bay, as described more fully in Chapter II.
(15.2)	TOPIC:	VISUAL QUALITY
	COMMENT:	Project needs to relate visually to the Colonnade Hotel, Marriott Hotel, and Copley Place through the use of sympathetic materials.
	RESPONSE:	The relationship of the Proposed Project to its Huntington Avenue context is described in Chapter IV B, Visual Quality. Briefly, the materials proposed for the project have been selected to reflect those of both its Huntington Avenue and St. Botolph Street contexts. Further use of materials prevalent along Huntington Avenue, such as extensive use of precast concrete in the building facade, could detract from the project's visual relationship with 19th century development along St. Botolph Street.

INTRODUCTION

This Final EIR will be distributed to the city, county, and state agencies and interested parties listed below. The list includes: those entities listed in the MEPA regulations; representatives of governmental agencies; public interest groups who have a special interest in the Prudential/St. Botolph's area; and individuals who have commented on the Project since the filing of the Environmental Notification Form, Notice of Project Change, and Draft EIR. Copies of this Final EIR are available from Constance Berman, Skidmore, Owings & Merrill, 334 Boylston Street, Boston, MA 02116 (617)-247-1070.

CITY AGENCIES

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Boston City Clerk
One City Hall Square
Boston, MA 02201

John P. Sullivan, Jr., Director of Engineering
Boston Water and Sewer Commission
10 Post Office Square
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Sheriff's Office
Suffolk County Court House
Boston, MA 02108

STATE AGENCIES

Royal Bolling, Sr., Senator
State House, Room 413F
Boston, MA 02133

Byron Rushing, Representative
State House, Room 167K
Boston, MA 02133

John Judge, Deputy Director
Governor's Office of Economic Development
State House, Room 109
Boston, MA 02133

Harry Trent
Division of Water Pollution Control
Department of Environmental Quality Engineering
1 Winter Street
Boston, MA 02108

Edward Kunce, Regional Environmental Engineer
Department of Environmental Quality Engineering
Metropolitan Boston/Northeast Regional Office
5 New Boston Street
Woburn, MA 01801

Metropolitan District Commission
20 Somerset Street
Boston, MA 02108
Attn: Environmental Planning Office

Katina Belezos
Massachusetts Water Resources Authority
Engineering Division
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

John Vitagliano
Office of the Secretary of Transportation
State Transportation Building
10 Park Plaza
Boston, MA 02116

Nicholas Cardelicchio
Executive Office of Transportation and Construction
10 Park Plaza, Room 3510
Boston, MA 02116 - 3966

Charles Steward
Massachusetts Bay Transportation Authority
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Valerie A. Talmage, Executive Director
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80 Boylston Street, Room 310
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Metropolitan Area Planning Council
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State Clearinghouse
100 Cambridge Street, 9th Floor
Boston, MA 02202

Department of Community Affairs
1 Ashburton Place
Boston, MA 02108

Massachusetts Aeronautics Commission
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INTERESTED PARTIES

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Libby Smith, President
St. Botolph Citizens' Committee, Inc.
175 St. Botolph Street, Apt. 5
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20 Cumberland Street
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Boston, MA 02115

Thomas Sokol
142 St. Botolph Street
Boston, MA 02115

Neil Ytkin
166 St. Botolph Street
Boston, MA 02115

Carole Valliere
30 Cumberland Street
Boston, MA 02115

Judith Bunde
121 St. Botolph Street
Boston, MA 02115

Max Trager
31 Cumberland Street
Boston, MA 02115

Josephine Humphrey
16 Harcourt Street
Boston, MA 02116

Jo Ann Toledano
16 Harcourt Street
Boston, MA 02116

Lorrey Bianchi
16 Harcourt Street
Boston, MA 02116

Appendix A - MEPA Documents
- Environmental Notification Form
- EOEA Sectretary's Scoping Certificate
- Notification of Project Change
- EOEA Response to Project Change

Appendix B - Transportation

The Environmental Notification Form (ENF) included on the following pages was filed with the Massachusetts Executive Office of Environmental Affairs (EOEA) on October 30, 1985 and noticed in the Environmental Monitor on November 12, 1985.

The Certificate of the Secretary of Environmental Affairs on the ENF, also included on the following pages, was issued on December 12, 1985. The scope of subject matter for the Draft EIR as defined in the Certificate was derived from agency review and comments received in response to the ENF.

Also included in this appendix is the Notification of Project Change, dated May 29, 1986. This document outlines proposed changes in the program of the Project and in the scope of the Draft EIR. The Response to the Notification of Project Change, dated July 3, 1986, is included as well. This letter confirms the scope of this Draft EIR for the project.

The Secretary of Environmental Affairs' Certificate on the Draft EIR is included in Chapter VI, Comments and Responses.

APPENDIX A
COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

ENVIRONMENTAL NOTIFICATION FORM

I. SUMMARY

A. Project Identification

1. Project Name: Parcel 1 - Fenway Urban Renewal District

2. Project Proponent: Urban Investment and Development Company
   Address: One Copley Place
   Boston, MA 02116

B. Project Description: (City/Town(s)) Boston

1. Location within city/town or street address: Block bounded by Garrison Street, Huntington Avenue and Harcourt Street.

2. Est. Commencement Date: Fall 1986 Est. Completion Date: Fall 1987
   Approx. Cost $ 28,000,000 Current Status of Project Design: 5 % Complete

C. Narrative Summary of Project

Describe project and give a description of the general project boundaries and the present use of the project area. (If necessary, use back of this page to complete summary).

Urban Investment and Development Company plans to develop urban renewal Parcel 1. The development includes 180 market rate condominiums, 8,000 square feet of retail space at the first floor, 16,000 square feet of office space at the second floor, and an underground parking garage with 180 spaces assigned exclusively to building tenant.

The 20,000 square foot site is located adjacent to Copley Place. The site covers the block bounded by Huntington Avenue, Harcourt Street, and Garrison Street. The site is presently used for construction staging and storage.
The plan is to construct 180 market rate condominium units. One bedroom condominiums ranging in size from 700 to 850 square feet will comprise 50 to 60 percent of the units; two bedroom units ranging in size from 1,200 to 1,300 square feet will comprise 30 to 40 percent of the units. The remainder will be three bedroom condominiums ranging in size from 1,500 to 1,700 square feet. The building will be approximately 351 feet (31 stories) in height.

Copies of this may be obtained from:
Name: Fred Merrill Firm/Agency: Sasaki Associates, Inc.
Address: 64 Pleasant Street, Watertown, MA 02172 Phone No. 926-3300

Use This Page to Complete Narrative, if necessary.

This project is one which is categorically included and therefore automatically requires preparation of an Environmental Impact Report: YES __X__ NO ______

D. Scoping (Complete Sections II and III first, before completing this section.)

1. Check those areas which would be important to examine in the event that an EIR is required for this project. This information is important so that significant areas of concern can be identified as early as possible, in order to expedite analysis and review.

	Construction Impacts	Long Term Impacts		Construction Impacts	Long Term Impacts
Open Space & Recreation			Mineral Resources		
Historical		X	Energy Use		
Archaeological			Water Supply & Use		X
Fisheries & Wildlife			Water Pollution		
Vegetation, Trees			Air Pollution	X	
Other Biological Systems			Noise	X	
Inland Wetlands			Traffic	X	X
Coastal Wetlands or Beaches			Solid Waste	X	
Flood Hazard Areas			Aesthetics		X
Chemicals, Hazardous Substances,			Wind and Shadow		X
High Risk Operations			Growth Impacts		
Geologically Unstable Areas			Community/Housing and the Built		
Agricultural Land			Environment		X
Other (Specify)					

2. List the alternatives which you would consider to be feasible in the event an EIR is required.

Options considered feasible are minor design modifications. The no-build alternative would be examined in the EIR.

E. Has this project been filed with EOEA before? Yes ______ No __X__
If Yes, EOEA No. __________ EOEA Action? __________

F. Does this project fall under the jurisdiction of NEPA? Yes ______ No __X__
If Yes, which Federal Agency? __________ NEPA Status? __None__

G. List the State or Federal agencies from which permits will be sought:

Agency Name	Type of Permit
Boston Redevelopment Authority and Massachusetts Turnpike Authority	Land Disposition Agreement
Department of Environmental Quality Engineering*	Chapter 91 License
Environmental Protection Agency	National Pollutant Discharge Elimination System Permit

*To be determined.

H. Will an Order of Conditions be required under the provisions of the Wetlands Protection Act (Chap. 131, Section 40)?
Yes ______ No __X__
DEQE File No., if applicable: __________

I. List the agencies from which the proponent will seek financial assistance for this project:

Agency Name	Funding Amount
None	Not Applicable

PROJECT DESCRIPTION

A. Include an original 8½ x 11 inch or larger section of the most recent U.S.G.S. 1:24,000 scale topographic map with the project area location and boundaries clearly shown. Include multiple maps if necessary for large projects. Include other maps, diagrams or aerial photos if the project cannot be clearly shown at U.S.G.S. scale. If available, attach a plan sketch of the proposed project.

B. State total area of project: __0.5± acres__
Estimate the number of acres (to the nearest 1/10 acre) directly affected that are currently:

1. Developed .... ____ acres
2. Open Space/Woodlands/Recreation ____ acres
3. Wetlands .... ____ acres

Vacant 0.5 acres

4. Floodplain .... ____ acres
5. Coastal Area .... ____ acres
6. Productive Resources
   - Agriculture .... ____ acres
   - Forestry .... ____ acres
   - Mineral Products .... ____ acres

C. Provide the following dimensions, if applicable:
Length in miles ______ Number of Housing Units __180__ Number of Stories __31__

	Existing	Immediate Increase Due to Project
Number of Parking Spaces	0	180
Vehicle Trips to Project Site (average daily traffic)	0	1,001 (see
Estimated Vehicle Trips past project site	18,850 ADT	19,851 attached)

D. If the proposed project will require any permit for access to local or state highways, please attach a sketch showing the location of the proposed driveway(s) in relation to the highway and to the general development plan; identifying all local and state highways abutting the development site; and indicating the number of lanes, pavement width, median strips and adjacent driveways on each abutting highway; and indicating the distance to the nearest intersection. Not Applicable

III. ASSESSMENT OF POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS

Instructions: Consider direct and indirect adverse impacts, including those arising from general construction and operations. For every answer explain why significant adverse impact is considered likely or unlikely to result.

Also, state the source of information or other basis for the answers supplied. If the source of the information, in part or in full, is not listed in the ENF, the preparing officer will be assumed to be the source of the information. Such environmental information should be acquired at least in part by field inspection.

A. Open Space and Recreation

1. Might the project affect the condition, use or access to any open space and/or recreation area?
   Yes ____ No __X__

   Explanation and Source:

   Presently the site is used for construction staging and storage. The site, although vacant land, is not an open space or recreation resource.

   Source: Urban Investment and Development Company

B. Historic Resources

1. Might any site or structure of historic significance be affected by the project? Yes __X__ No ____

   Explanation and Source:

   The site is adjacent to but not part of the St. Botolph St. Historic District. The new building will replace the current vacant lot with a structure compatible with Copley Place and other recent developments as well as visually relating to the adjacent historic district. The Boston Landmarks Commission has no statutory review of this project.

   Source: Boston Landmarks Commission

2. Might any archaeological site be affected by the project? Yes ____ No __X__

   Explanation and Source:

   This site has been disturbed by recent building and filling. No archaeological review was required for either Copley Place or Tent City, both of which are in the vicinity of the site.

   Source: Tent City EIR/EIS, 1985.

C. Ecological Effects

1. Might the project significantly affect fisheries or wildlife, especially any rare or endangered species?
   Yes ____ No __X__

   Explanation and Source:

   The site is devoid of fisheries and wildlife, rare or otherwise.

   Source: Sasaki Associates, Inc.


CAMBRIDGE
East Cambridge
Charlestown Bridge
Coast Guard Station
Charles River Dam
Mass General Hosp
Kendall Square
Longfellow Bridge
Mass Institute of Technology
Beacon Hill
City Hall
Charles River Basin
RIVER
Harvard Bridge
Boston Common
MIDDLESEX CO
SUFFOLK CO
Memorial Dr
Back Bay
Copley Square
Storrow
INTERCHANGE
SITE
South Sta
Fort Point Channel
Northeastern University
Simmons College
Harvard Medical Sch
Roxbury Crossing
Franklin Square
South Boston
Columbus Park
BOSTON

2. Might the project significantly affect vegetation, especially any rare or endangered species of plant?
Yes ______ No X
(Estimate approximate number of mature trees to be removed: ____________)

Explanation and Source:

The site contains a few scattered shrubs and weeds. The urban character of the site does not provide a suitable habitat for any rare or endangered species of plant as listed by the Massachusetts Audubon Society (October 1973).

Source: Sasaki Associates, Inc.

3. Might the project alter or affect flood hazard areas, inland or coastal wetlands (e.g., estuaries, marshes, sand dunes and beaches, ponds, streams, rivers, fish runs, or shellfish beds)? Yes ______ No X

Explanation and Source:

The site is not in any inland or coastal wetland or flood hazard area.

Source: Boston Zoning Department and Federal Emergency Management Agency maps issued April 1982.

4. Might the project affect shoreline erosion or accretion at the project site, downstream or in nearby coastal areas? Yes ______ No X

Explanation and Source:

The parcel is situated inland, well away from any coastal areas. Therefore, the project will not affect shoreline erosion or accretion.

Source: Sasaki Associates, Inc.

5. Might the project involve other geologically unstable areas? Yes ______ No X

Explanation and Source:

The U.S.G.S. Geological Survey places Boston and most of southern New England in an area of some seismic risk. Additionally, areas adjacent to the site have a high water table. Therefore, the site will require dewatering during construction Dewatering will be done in accordance to standard construction procedures and shoul present no constraints to development. Existing groundwater level will be maintai during and after construction.
Source: "New England Earthquakes," Weston Geophysical and Tent City EIS/EIR, 1985

D. Hazardous Substances

1. Might the project involve the use, transportation, storage, release, or disposal of potentially hazardous substances?
Yes ______ No X

Explanation and Source:

The project will not involve transportation, storage, release or disposal of potentially hazardous substances.

Source: Urban Investment and Development Company

E. Resource Conservation and Use

1. Might the project affect or eliminate land suitable for agricultural or forestry production?
   Yes ______ No __X__
   (Describe any present agricultural land use and farm units affected.)

   Explanation and Source:

   Given its present urban setting, the site is not suitable for agricultural or forestry production.

   Source: Sasaki Associates, Inc.

2. Might the project directly affect the potential use or extraction of mineral or energy resources (e.g., oil, coal, sand & gravel, ores)? Yes ______ No __X__

   Explanation and Source:

   The site is historically filled lands and its development will not pre-empt the use or extraction of any mineral or energy resources.

   Source: Sasaki Associates, Inc.

3. Might the operation of the project result in any increased consumption of energy? Yes __X__ No ______

   Explanation and Source:
   (If applicable, describe plans for conserving energy resources.)

   During construction energy will be consumed via equipment operation and travel to and from the site. Operation of air conditioners, heating units, and lights will result in long-term energy consumption. Also, commuters travelling to and from the building will consume fossil fuels. The daily energy consumption for the building will exceed 2 million BTU; however, 40 percent of the energy will be supplied by electricity (a non-fossil fuel energy source).
   Source: Sasaki Associates, Inc. and Shooshanian Engineering, Assoc.

F. Water Quality and Quantity

1. Might the project result in significant changes in drainage patterns? Yes ______ No __X__

   Explanation and Source:

   The present stormwater runoff runs into the street drainage system and will continue to do so upon project completion. There will be negligible change in the pattern, rate, or volume of stormwater runoff as a result of this project.

   Source: Sasaki Associates, Inc.

2. Might the project result in the introduction of pollutants into any of the following:
   (a) Marine Waters .... Yes ______ No __X__
   (b) Surface Fresh Water Body .... Yes ______ No __X__
   (c) Ground Water .... Yes ______ No __X__

   Explain types and quantities of pollutants.

   The site drainage will enter the street drainage system.

   Source: Urban Investment and Development Company

3. Will the project generate sanitary sewage? Yes X No ____

If Yes, Quantity: 33,000± gallons per day

Disposal by: (a) Onsite septic systems .... Yes ____ No X
(b) Public sewerage systems .... Yes X No ____
(c) Other means (describe) ____

(See attached)
Source: State Environmental Code - Title 5

4. Might the project result in an increase in paved or impervious surface over an aquifer recognized as an important present or future source of water supply? Yes ____ No X

Explanation and Source:

The site is paved in its existing condition. The project is not in an area recognized as a water supply since Boston uses no local groundwater supply.

Source: Executive Office of Environmental Affairs Water Supply Policy Statement 19

5. Is the project in the watershed of any surface water body used as a drinking water supply?
Yes ____ No X

Are there any public or private drinking water wells within a 1/2-mile radius of the proposed project?
Yes ____ No X

Explanation and Source:

Water will be supplied by the Massachusetts Water Resources Authority which draws from the Quabbin and Wachusett Reservoirs located in the north-central part of the state. There is no drinking water supply near the site.

Source: Tent City EIR/EIS, 1985.

6. Might the operation of the project result in any increased consumption of water? Yes X No ____

Approximate consumption 36,000 gallons per day. Likely water source(s) BSWC/MWRA

Explanation and Source:

Water will be provided by the Massachusetts Water Resources Authority through the Boston Sewer and Water Commission. (See attached.)

Source: Tent City EIR/EIS, 1985.

7. Does the project involve any dredging? Yes ____ No X

If Yes, indicate:
Quantity of material to be dredged ____
Quality of material to be dredged ____
Proposed method of dredging ____
Proposed disposal sites ____
Proposed season of year for dredging ____

Explanation and Source:

The project will not require any dredging.

Source: Sasaki Associates, Inc.

G. Air Quality

1. Might the project affect the air quality in the project area or the immediately adjacent area?
Yes ____ No _X_

Describe type and source of any pollution emission from the project site.

Construction activity will result in minor dust from earth removal. Dust will be controlled by standard construction practices. Emissions from construction equipment an trucks travelling to and from the site during construction will have an insignificant affect on air quality. Traffic generated by the project should not result in exceedance of the National Ambient Air Quality Standards. There are no air quality problems in the vicinity of the site. Construction activities and long-term use of the site from normal building operations will generate minor amounts of suspended particulates, hydrocarbons, carbon monoxide, nitrous oxides, and sulfur dioxide. Source: Copley Place EIR/EIS, 1980 and Tent City EIR/EIS, 1985.

2. Are there any sensitive receptors (e.g., hospitals, schools, residential areas) which would be affected by any pollution emissions caused by the project, including construction dust? Yes _X_ No ____

Explanation and Source:

The Marriott Hotel is located to the north-east of the site, The Colonnade Hotel to the south-west along Huntington Avenue, and South End housing is located to the south-east of the site on St. Botolph Street.

Source: Sasaki Associates, Inc.

3. Will access to the project area be primarily by automobile? Yes _X_ No ____

Describe any special provisions now planned for pedestrian access, carpooling, buses and other mass transit.

One hundred and eighty parking spaces will be provided to the tenants of the residential units. The retail and office uses will generate a minor number of vehicle trips to the site. Most of these trips will be via public transportation. Public transportation in the vicinity of the site includes the realigned MBTA Orange Line, the Green Line, two commuter rail lines, and several bus routes.

Source: Tent City EIS/EIR, 1985.

H. Noise

1. Might the project result in the generation of noise? Yes _X_ No ____

Explanation and Source:
(Include any source of noise during construction or operation, e.g., engine exhaust, pile driving, traffic.)

Construction activity will elevate noise in the vicinity of the site. Traffic generated by the project is not expected to cause a noticeable increase in ambient noise conditions.

Source: Sasaki Associates, Inc.

2. Are there any sensitive receptors (e.g., hospitals, schools, residential areas) which would be affected by any noise caused by the project? Yes _X_ No ____

Explanation and Source:

The same sensitive receptors described as air quality sensitive receptors will be affected by construction noise.

Source: Tent City EIR/EIS, 1985.

I. Solid Waste

1. Might the project generate solid waste? Yes __X__ No ____.

Explanation and Source:
(Estimate types and approximate amounts of waste materials generated, e.g., industrial, domestic, hospital, sewage sludge, construction debris from demolished structures.)

Minor quantities of solid waste will be generated during construction activities. Removal of domestic waste will be by private contractors under contract to the City. Waste removal from retail and office areas will be the responsibility of the owners.

Source: Sasaki Associates, Inc.

J. Aesthetics

1. Might the project cause a change in the visual character of the project area or its environs?
Yes __X__ No ____

Explanation and Source:

Presently the site is an unpaved lot on which construction vehicles are parked. present site does not visually harmonize with Copley Place or the South End neighborhood. The construction of a 31-story building on the site will visually enhance the character of this urban site.

Source: CBT, Inc. and Sasaki Associates, Inc.

2. Are there any proposed structures which might be considered incompatible with existing adjacent structures in the vicinity in terms of size, physical proportion and scale, or significant differences in land use?
Yes ____ No __X__

Explanation and Source:

The 31-story building will provide a transition zone between the taller Copley Place commercial uses (i.e. the Marriott Hotel) and the lower-rise South End residences along St. Botolph Street.
Source: CBT, Inc. and Sasaki Associates, Inc.

3. Might the project impair visual access to waterfront or other scenic areas? Yes ____ No __X__

Explanation and Source:

The project site is not near the waterfront and will not impair visual access to any other scenic areas.

Source: Sasaki Associates, Inc.

K. Wind and Shadow

1. Might the project cause wind and shadow impacts on adjacent properties? Yes __X__ No ____

Explanation and Source:

The project will result in a slight change in local wind patterns. Additionally the 31-story building will cast new shadows primarily along Huntington Avenue and Copley Place. Wind and shadow studies for the proposed project will be conducted for the Boston Redevelopment Authority as part of the design process.

Source: CBT, Inc. and Sasaki Associates, Inc.

IV. CONSISTENCY WITH PRESENT PLANNING

A. Describe any known conflicts or inconsistencies with current federal, state and local land use, transportation, open space, recreation and environmental plans and policies. Consult with local or regional planning authorities where appropriate.

The development of commercial use and residential use is consistent with the Fenway Urban Renewal Plan. Presently the proposal, at 31 stories, exceeds the current zoning of B-2, which provides for a 2.0 FAR. However, the BRA will be making zoning changes in the near future to allow more design flexibility. The proposed development provide a transition between Copley Place and the South End neighborhood.

Source: Boston Redevelopment Authority

V. FINDINGS AND CERTIFICATION

A. The notice of intent to file this form has been/will be published in the following newspaper(s):

(Name)	(Date)
Boston Ledger	November 3, 1985
South End News	November 7, 1985
Boston Globe	November 7, 1985

B. This form has been circulated to all agencies and persons as required by Appendix B.

10/30/85
Date

Signature of Responsible Officer or Project Proponent

Urban Investment and Development Company
Name (print or type)

Address One Copley Place
Boston, MA 02116

Telephone Number 262-6600

10-31-85
Date

Fred Merrill
Signature of person preparing ENF (if different from above)

Fred Merrill
Sasaki Associates, Inc.
Name (print or type)

Address 64 Pleasant Street
Watertown, MA 02172

Telephone Number 926-3300

SEWER SERVICE

Bedroom Units

180 x .50 = 90	1 bedroom = 90
180 x .40 = 72	2 bedroom = 144
180 x .10 = 18	3 bedroom = 54
	288 bedrooms

Project Component	Generation Rate*	Sewage Generation (gpd)
Residential (288 bedrooms)	110 gpd/bedroom	31,680
Commercial (24,000 sf)	5 gpd/100 sf	1,200
		Total 32,880

WATER SUPPLY

Project Componenet	Amount	Water Demand** (gpd)
Residential	288 bedrooms	34,848
Commercial	24,000 sf	1,318
		Total 36,166

*Source: Title 5, Massachusetts State Environmental Code.
**Source: Tent City EIR/EIS, 1985.

TRAFFIC

From P.M. Peak Hour Volumes Existing (1984)

EXISTING AVERAGE DAILY TRAFFIC

812 + 325 = 1,137 westbound -	from intersection of Huntington Avenue and Exeter Street
141 + 544 + 63 = 748 eastbound -	from intersection of West Newton Street and Huntington Avenue

Assume P.M. peak 10% of ADT = 18,850

TRIP GENERATION

	Trip Rate	Average Weekday
Per 180 Dwelling Units	5.2	936
Community Retail Per:		
8,000 gsf - Total Trips = 146 - Vehicle Trips = 36	18.3/1,000 gsf	
		36
Office Parking:		
16,000 gsf - Total Trips = 117 - Vehicle Trips = 29	7.3/1,000 gsf	29
	TOTAL TRIPS	1,001

Source: Copley Place EIR/EIS, 1980 and Tent City EIR/EIS, 1985.

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S. DUKAKIS
GOVERNOR

JAMES S. HOYTE
SECRETARY

December 12, 1985

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	:	Parcel 1 - Fenway Urban Renewal District
PROJECT LOCATION	:	Boston, Massachusetts
EOEA NUMBER	:	5777
PROJECT PROPONENT	:	Urban Investment and Development Company
DATE NOTICED IN MONITOR	:	November 12, 1985

Pursuant to Section 62A of the Massachusetts Environmental Policy Act (G.L., c.30, s.62-62H) and Sections 10.04(1) and 10.04(9) of the regulations implementing MEPA (301 CMR 10.00), I hereby determine that the proposed development of Parcel 1 in the Fenway Urban Renewal District requires the preparation of an Environmental Impact Report.

The project, consisting of approximately 180 residential units and 24,000 ft^2 of commercial/office space in a 31-story structure, is categorically included for the preparation of an EIR by the provisions of 301 CMR 10.32. Because the project requires the transfer of agency lands, there are no limits to the subject matter of the EIR.

The EIR should follow the general format given in 301 CMR 10.05(7). Where possible, technical data should be presented in appendices and summarized in text, which should be prepared for a lay audience and should be supported by clear graphics and tables. The EIR must contain a copy of this Certificate and should address the following specific areas:

<u>Project Description</u> - The project description should include detailed information on the project as proposed, a summary of the history and background of the project, a discussion of alternatives that have been considered and rejected, and a clear statement of the objectives of the project as they relate to City of Boston goals for the site and the area.

<u>Alternatives to the Proposed Project</u> - The EIR must consider the No Build alternative as the base case against which the effects

of the proposed project can be compared. In addition, at least one "low build" alternative at a height of 12 to 14 stories shall be considered.

Aesthetics and Visual Quality - The EIR should portray each alternative as it relates to its surroundings through the use of perspective drawings, renderings, and photographs. Points of reference for this comparison should include the St. Botolph Street neighborhood, the Huntington Avenue facades to the west, and Copley Place. Discussion should include the scale and massing of the structure, its surface material and details, and the views of the structure from and in relation to each of the points of reference.

Historic Resources - The effects of the project on the St. Botolph Street Conservation District should be fully investigated in the EIR. This will parallel, in many ways, the aesthetic and visual analysis, but should focus on the context of the historic resource and on project alternatives to minimize adverse effects. The Massachusetts Historical Commission should be contacted for guidance in this assessment, which should be coordinated with the EIR process, reported on in the Draft EIR, and resolved in the Final EIR.

Wind and Shadow - The project may be affected by wind and shadow from the taller structures at Copley Place and may have an effect on wind and shadow conditions to the south, east, and west of the site. Detailed analyses of these impacts should be presented, including wind tunnel modeling and shadow diagrams for solstice and equinox conditions. The guidance of the BRA should be sought in these efforts.

Geology and Groundwater - The geology, groundwater hydrology, and foundation conditions at the site should be described. Project impacts on groundwater level, especially during construction dewatering, should be described, as should the impacts of construction of the proposed foundation system. Recent groundwater level assessments carried out for the BRA may be of use in this assessment.

Water and Sewer - The water and sewer systems serving the project site should be described in terms of location, size, condition, and capacity. The water needs and sewage generation of the project should be determined and the effects of these demands on the systems should be assessed. Plans for the disposal of construction drainage should be described and assessed. Data on and guidance for these topics may be obtained from the Boston Water and Sewer Commission.

Traffic and Parking - The study area for this effort is to be bounded by Massachusetts Avenue, Boylston Street, Dartmouth Street, and Columbus Avenue. Existing data on traffic and parking may be taken directly from the Back Bay Study recently completed by the Boston Traffic and Parking Department; no new counts are required.

The traffic assessment should include existing conditions, No Build conditions in 1988, and Build conditions in 1988. Data should be presented on average daily traffic and peak hour traffic for the network and on level of service for any intersection carrying over 20 percent of the project traffic. In the parking analysis, the relationship of the proposed parking to the requirements of the Boston Parking Freeze, the parking needs of the residents and visitors, and the local on street parking supply should be investigated. Mitigation measures should be proposed for any negative effects to either traffic flow or parking.

Since the EIR will serve both for the MEPA review and as a part of the BRA review of the project, early coordination with the BRA is suggested to assure that the analyses carried out for the EIR meet the review needs of the BRA. In addition, the EIR should be responsive to the concerns raised in the attached comments received on the Environmental Notification Form.

When completed, the EIR should be circulated to those agencies required by 301 CMR 10.31, the BRA and other City of Boston reviewing agencies, and the authors of the attached comments. An additional 10 copies should be made available for general circulation.

December 12, 1985
DATE

JAMES S. HOYTE, SECRETARY

Attachments: Bard (MAPC) Letter - 11/19/85
Collier (NABB) Letter - 12/5/85
Talmage (MHC) Letter - 12/5/85
Smith (SBCC) Letter - 12/9/85

JSH/SCD/sd

URBAN
INVESTMENT AND
DEVELOPMENT CO.

BY HAND

May 29, 1986

Mr. James S. Hoyte, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

Re: Parcel 1 - Fenway Urban Renewal District
EOEA #5777
Notification of Project Change

Dear Secretary Hoyte:

On October 31, 1985, Urban Investment and Development Co. (UIDC) filed an Environmental Notification Form for this project and subsequently received your scoping certificate dated December 12, 1985. Prior to the issuance of the certificate, meetings were held with representatives from the surrounding neighborhood, market analyses were in process, and discussions were on-going with the Boston Redevelopment Authority. However, many planning and development issues for the site and the project have since been reviewed further and the project now under consideration is sufficiently different to warrant a Notification of Project Change. We request that you review these changes and provide your concurrence such that we can proceed to a Draft EIR which properly addresses the project as now conceived.

Modifications to program and design have responded to three different forces affecting the project:

> First, continuing market studies began to confirm UIDC's concerns about the wisdom of bringing housing onto the market in this area, in addition to the 270 new units already under construction on the Tent City site. UIDC still holds vacant units in the Copley Place Residences across Harcourt Street. At the same time, the 100,000 square feet of office space which had been unoccupied in Copley Place prior to December were suddenly filled, and our tenants began to request additional office space nearby. Additionally, it should be noted that UIDC's expertise is in office/retail development, more so than in the development of housing.

Secondly, representatives from the surrounding community had expressed concerns about the housing project. These focused on issues of height, the number of parking spaces and potential conflicts with neighborhood parking and traffic conditions, and the effects of 180 additional housing units on the character and density of the community.

Finally, as the time for Tentative Designation approached, the BRA requested that UIDC consider changing the project from housing to office use, and in so doing reduce the height from 351 feet to a maximum of 250 feet. This route seemed the most successful approach to addressing community concerns and resolving outstanding issues of UIDC's contribution to the Tent City site development. A Memorandum of Understanding (MOU) is now complete and Urban has been granted Tentative Designation as the developer for the site. The project has been identified as a 300,000 square foot office building with retail uses at the ground floor, with maximum height of 250 feet to the parapet.

A comparative description of the Fall, 1985 concept (as expressed in the ENF) with the current concept is provided below:

ENF Project - Fall, 1985	Current Project - Spring, 1986
300,000 SF Total Program	300,000 SF Total Program (above grade)
180 Condominium Units 8,000 SF Retail 16,000 SF Office	290,000 SF Office 10,000 SF Retail
180 Parking Spaces Below Grade 351 feet (31 stories)	60-80 Parking Spaces Below Grade 250 feet (21 stories)

As it is clear from this description, the primary changes are in the elimination of housing uses, substitution of office use, reduction in building height of 100 feet (approximately 30%), and reduction of parking by nearly two thirds. Resulting design changes are illustrated on the elevations included with this letter. At an early schematic design stage, major features of the design now include: a lower building at 18-21 stories, varied massing with setbacks and bays, and an articulated facade of high quality masonry materials. Overall, it is a design related to the quality and character of the surrounding older district.

For purposes of your review, we have considered each of the impact categories outlined in your Certificate and noted any changes or additions to the analyses

which we feel would reasonably result from the project changes. As noted in the Certificate, we assume that an alternative at 12-14 stories and the No-Build alternative will also be tested in areas of aesthetics, visual quality, historic resources, wind, and shadow. A summary by impact category is included below:

Aesthetics and Visual Quality. A full analysis of the new 18-21 story building, as well as the 12-14 story alternative, is anticipated using drawings, renderings, and photographs as noted in the MEPA scope.

Historic Resources. Requirements to analyze the project in relation to the St. Botolph Street's Conservation District, in consultation with the Massachusetts Historical Commission remain valid as written. It has been our intention in continuing design modifications to respond positively to nearby historic resource areas.

Wind and Shadow. The building now proposed is lower, has an articulated facade and stepped massing and holds the potential for design features which minimize pedestrian level winds. A detailed analysis of this scheme and the "low-build" alternative in relation to wind and shadow effects as required by MEPA will be completed.

Geology and Groundwater. The reduction in the number of parking spaces from 180 at the time of the ENF filing to 60-80 spaces in present plans means that the excavation required should be significantly reduced. Studies as outlined by MEPA will identify any potential effects on groundwater levels.

Water and Sewer. Based upon Title V, Massachusetts State Environmental Code Calculations, the sewage flow and water demand generated by the proposed project are reduced in comparison to the ENF plan. Comparative estimates are as follows:

	ENF Project	Current Project
Sewage Flow	32,880	22,250
Water Demand	36,166	25,473

The decline in sewage generation and water demand can be attributed to the shift away from residential use and towards office use. A full description of sewer and water systems, generation factors, effects on the public utilities and construction drainage procedures will be included, as specified by MEPA.

Traffic and Parking. Utilizing the Copley Place and Tent City EIR/EIS documents, the ENF for this site estimated the total average Daily Traffic to the site at 1001 trips. The current office/retail program, assuming 80 parking spaces on site, is estimated to result in 975 vehicle trips (Average Daily Traffic) to the site.

The study area as outlined by the MEPA scope appears fully sufficient to address the major traffic routes to the site. We would however, propose to add a public transportation analysis to the scope. In addition, discussions have been initiated with representatives of the St. Botolph

Community and with the Boston Parking Freeze administrators in an effort to allow shared parking usage which would ease night time parking problems in the neighborhood. A full report will be provided in the Draft EIR.

Construction. Although not specifically called out in your scoping certificate, the Draft EIR will examine construction impacts (e.g. traffic, noise, dust, groundwater) as required by the MEPA regulations.

Finally, in our efforts to further reduce the height of the building in concert with community concerns, we are working with a design concept at 18 stories. This design will require a reconfiguration of the existing curb and elimination of the parking lane. Should this be a more viable alternative, resulting traffic, parking, visual, wind, shadow and other impacts along Huntington Avenue will be studied.

At the request of Steven Davis of your staff, we will use the following procedures for circulation and review of this Project Change Statement:

- It is our understanding that this letter will be formally filed with the EOEA on May 30, 1986, and will be noticed in the next Environmental Monitor.
- The letter will at the same time be circulated to all reviewing agencies and all persons who commented in the ENF.
- An open public consultation session has been scheduled for June 13, 1986 at 10:00 A.M. at the Copley Place Marriott Hotel in the Simmons Room on the third floor. This will allow for discussion of the MEPA scope requirements in relation to the modified project.
- The period for submission of written comments will be open until June 24, 1986.
- We understand that MEPA will then take seven days to complete their review and a letter will be issued by July 1, 1986 outlining any required modifications to the DEIR scope.

We look forward to proceeding expeditiously and utilizing the MEPA process to help resolve any environmental issues which may arise. Please feel free to contact me or our consultant Skidmore, Owings & Merrill (Karen Alschuler or Robert Kaye, at 247-1070) with any questions or request for further information.

Very truly yours,

URBAN INVESTMENT AND DEVELOPMENT CO.

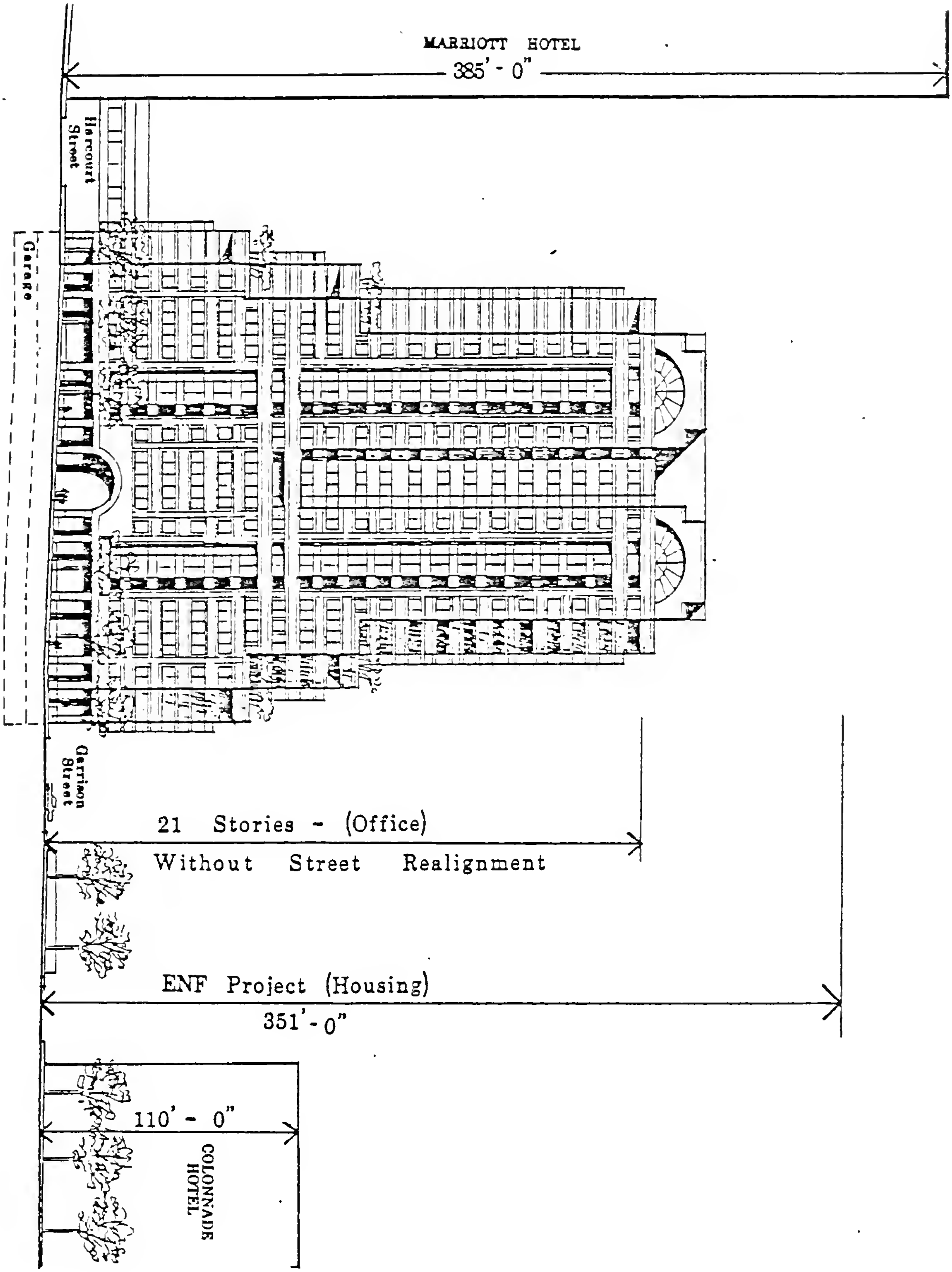
R. K. Umscheid

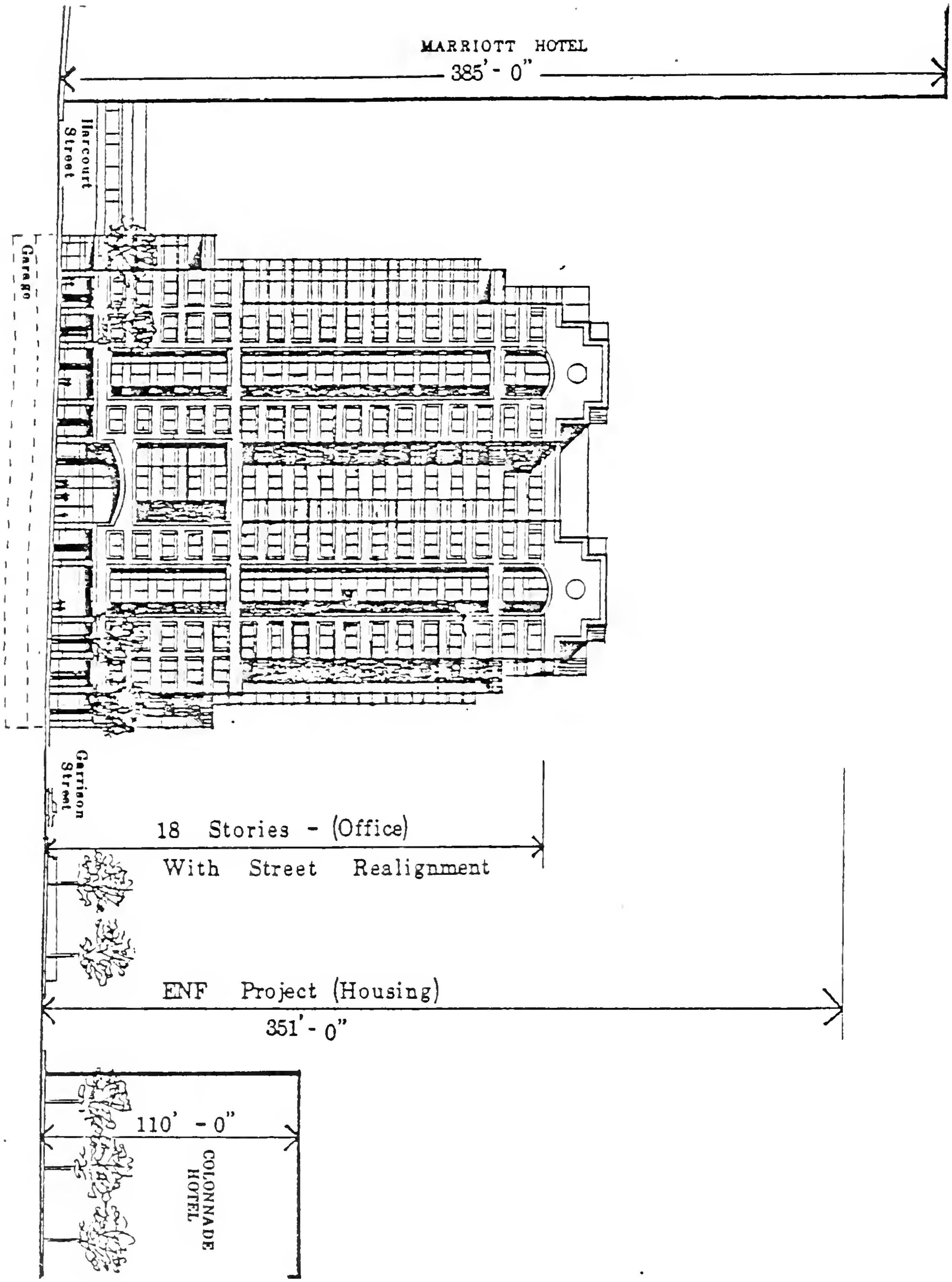
Senior Vice President

RKU/cb

Attachment

cc: Steven Davis, MEPA Unit
Stephen Coyle, Director BRA
All reviewing agencies and commentors on the ENF filed in October 1985.


MARRIOTT HOTEL
385' - 0"
Harcourt Street
Garage
Garrison Street
21 Stories - (Office)
Without Street Realignment
ENF Project (Housing)
351' - 0"
110' - 0"
COLONNADE HOTEL


MARRIOTT HOTEL
385' - 0"
Harcourt Street
Garage
Garrison Street
18 Stories - (Office)
With Street Realignment
ENF Project (Housing)
351' - 0"
110' - 0"
COLONNADE HOTEL

Distribution:

Department of Environmental Quality Eng.
1 Winter Street
Boston, MA 02108

Department of Environmental Quality Eng.
Met. Boston/Northeast Regional Office
4 Commercial Way
Woburn, MA 01801

Metropolitan District Commission
20 Somerset Street
Boston, MA 02108
Attn: Environmental Planning Office

Murph Yule
Executive Offices of Communities
and Development
Commonwealth of Massachusetts
One Ashburton Place
Boston, MA 02108

John T. Driscoll
Chairman
Mass. Turnpike Authority
10 Park Plaza, Suite 5170
Boston, MA 02116

Massachusetts Bay Transportation Authority
50 High Street
Boston, MA 02110

Massachusetts Aeronautics Commission
10 Park Plaza
Room 6620
Boston, MA 02116

Valerie A. Talmage
Executive Director
Massachusetts Historical Commission
294 Washington Street
Boston, MA 02108

Joel B. Bard
Assistant Director
Metropolitan Area Planning Council
110 Tremont Street
Boston, MA 02108

Boston Conservation Commission
1 City Hall Square
Boston, MA 02201

Boston City Clerk
1 City Hall Square
Boston, MA 02201

Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201
Attn: Mr. Richard Mertens

Libby Blank
Boston Water & Sewer Commission
10 Post Office Square
Boston, MA 02109

Richard A. Dimino
Boston Parking and Traffic Commission
1 City Hall Square
Boston, MA 02201

Carmine Buono
Boston Department of Public Works
1 City Hall Square
Boston, MA 02201

Judy McDonough
Survey Director
Boston Landmarks Commission
Environmental Department
Room 813
Boston City Hall
Boston, MA 02201

Libby Smith
President
St. Botolph Citizens' Committee, Inc.
175 St. Botolph Street, Apt. 5
Boston, MA 02115

Terence Geoghegan
Chairman, Subcommittee on Parcel A
20 Cumberland Street
Boston, MA 02115

Richard Booth
Corporate Counsel
The Gillette Company
Prudential Tower
Boston, MA 02199

Joseph Nevin
c/o Bergmeyer Associates
118 South Street
Boston, MA 02111

Peter Scholnick
14 Follen Street #3
Boston, MA 02116

Clayton Westland
7 Durham
Boston, MA 02115

Norman T. Burns, Esq.
Gaston Snow & Ely Bartlett
1 Federal Street
Boston, MA 02110

Judy Collier
President
The Neighborhood Association of the
Back Bay, Inc.
314 Commonwealth Avenue
Boston, MA 02115

Frances Duffly
289 Marlborough Street
Boston, MA 02116

Jim Magliozzi
c/o J.F. White Properties
One Gateway Circle
Newton, MA 02158

4024A

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S DUKAKIS
GOVERNOR

JAMES S HOYTE
SECRETARY

July 3, 1986

Mr. R. K. Umscheid
Senior Vice President
Urban Investment and Development Co.
Suite 600, One Copley Place
Boston, MA 02116

Re: Notice of Project Change - Fenway Parcel 1 (EOEA #5777)

Dear Mr. Umscheid:

I have reviewed your notice of project change dated May 29, 1986, the results of the review meeting held on June 13, 1986, and the correspondence received on the notice. Based on the factors cited in 301 CMR 10.16(2), it is the opinion of the Secretary that the changes listed do not materially affect the contents of the scope issued for the project in his Certificate on the Environmental Notification Form dated December 12, 1986. Therefore, you may proceed with the Draft EIR under the guidance of the Certificate, as amplified by public comment at the review meeting and the attached correspondence. I also take note of, and encourage, the addition of items that you proposed for inclusion in the EIR, especially the public transit analysis, shared parking, and construction impact.

Sincerely,

Steven C. Davis, for
Samuel G. Mygatt
Assistant Secretary
Environmental Impact Review

Attachment: Booth (SBCC) Letter - 6/24/86

cc: Distribution (w/o Attachment)

SGM/SCD/sd

The following appendix supplements the discussion of Transportation impacts presented in Section IV A of this Final EIR. Included in the following pages is information detailing turning movement counts, intersection analysis results, and supplementary traffic counts. Further technical data is available from Skidmore, Owings & Merrill upon request.

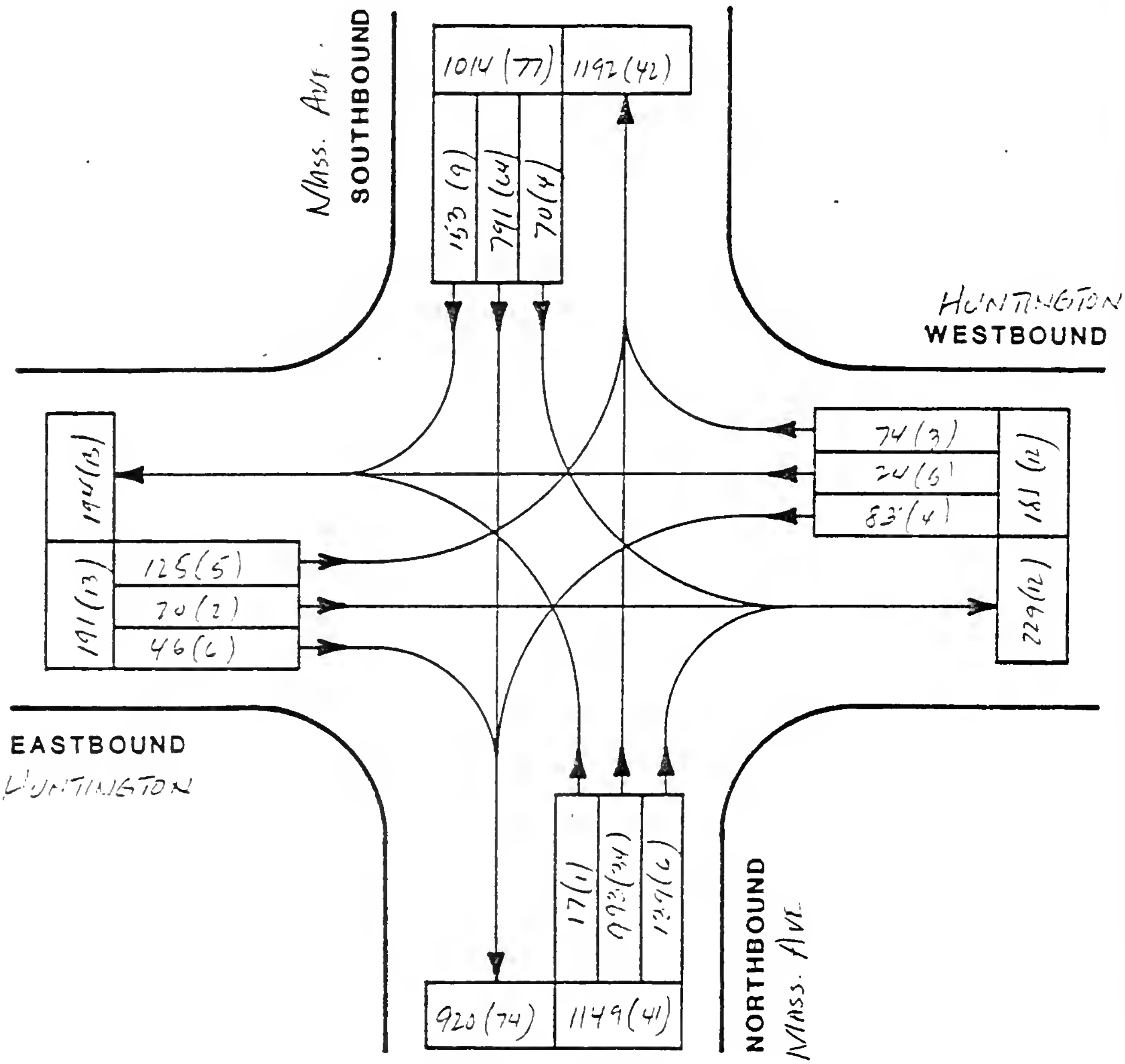
SUPPLEMENTARY INTERSECTION TURNING MOVEMENT COUNTS

Consulting Engineers & Planners
60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston Mass DATE 10/23/86 DAY of WEEK Thurs.

INTERSECTION Huntington Ave / Mass Avenue JOB No. 1647



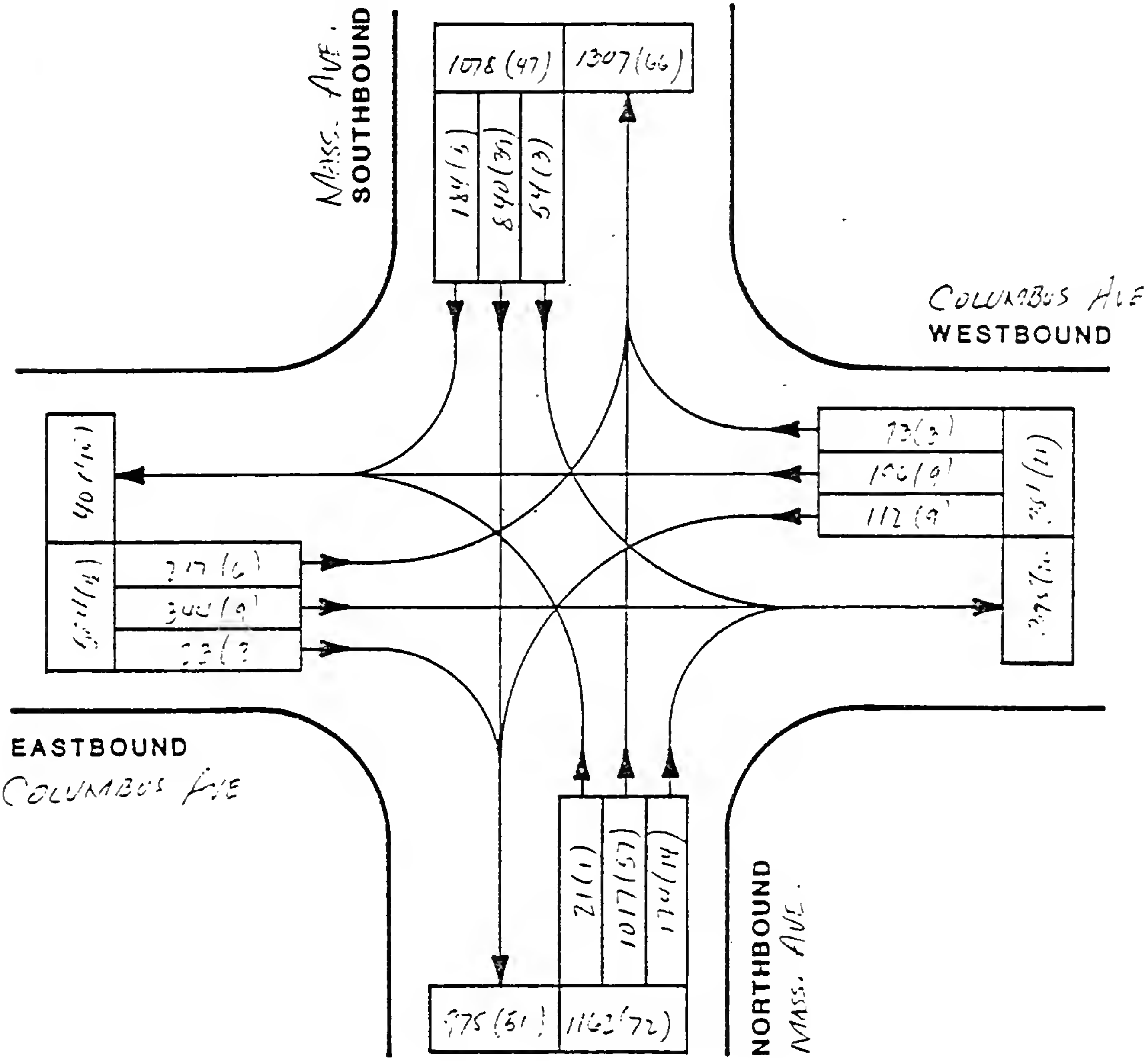
STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
Mass. Ave N.B	1149 (41)	45 %	PEAK HOUR
Mass Ave S.B	1014 (77)	40 %	
Huntington Ave E.B	191 (13)	8 %	7:45 – 8:45 AM
Huntington Ave W.B	181 (12)	7 %	
			VEHICLES COUNTED
			ALL VEHICLES XXX [illegible]
			TRUCKS (XX) [illegible]
TOTAL	2535	100 %	PERCENT TRUCKS 6 %

60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston Mass. DATE 11/18/86 DAY of WEEK Tuesday

INTERSECTION Mass. Ave. / Columbus Ave JOB No. 1647

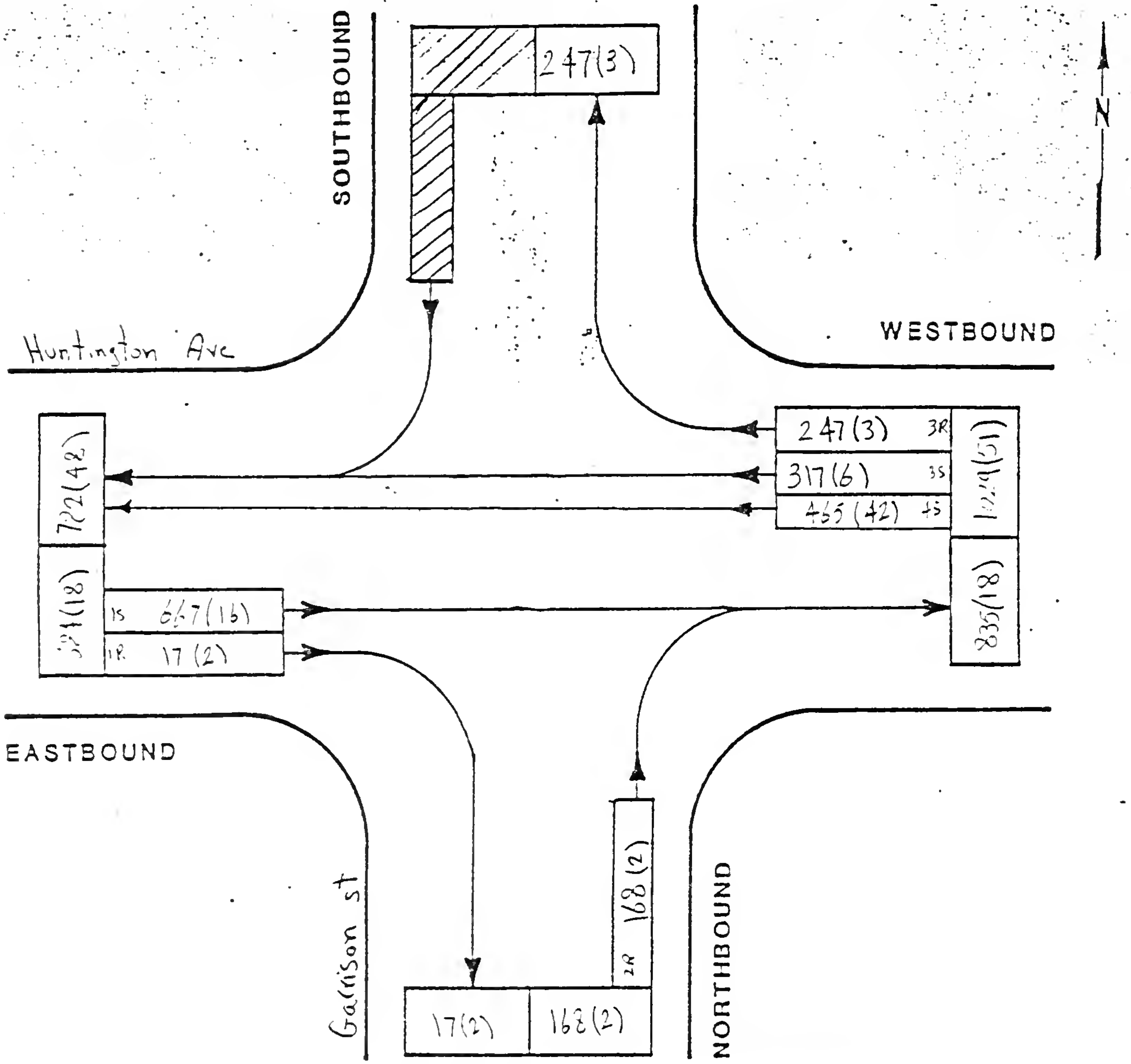


STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
Mass Ave. NB	1162 (72)	36%	PEAK HOUR
Mass Ave SB	1078 (47)	34%	
Columbus Ave EB	584 (18)	18%	7:30 - 8:30 AM
Columbus Ave WB	381 (31)	12%	
			VEHICLES COUNTED
			ALL VEHICLES XXX 3205
			TRUCKS (XX) [illegible]
TOTAL	3205	100%	PERCENT TRUCKS 5 %

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston MASS DATE 10/22/86 DAY of WEEK wednesday

INTERSECTION GARRISON st / Huntington Ave JOB No. 1647



STREET	ENTERING VOLUME	PERCENT OF FLOW
Huntington Ave Eastbound	684 (18)	36.36
Huntington Ave Westbound	1029 (51)	54.71
Garrison st Northbound	168 (2)	8.93
TOTAL	1881 (71)	100

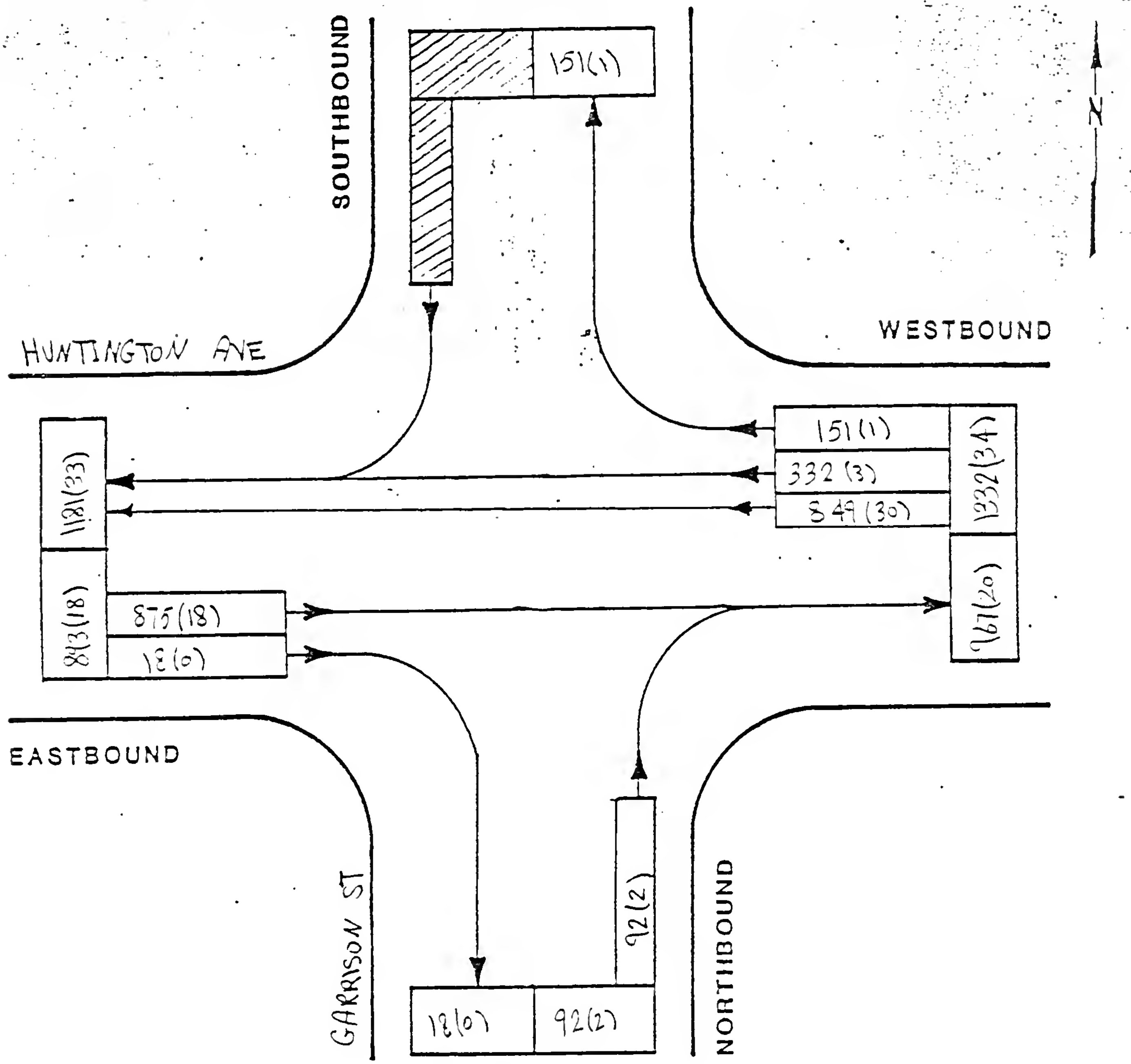
TIME of COUNT
AM Peak hour
7:45 AM - 8:45 AM
VEHICLES COUNTED
ALL VEHICLES XXX 1881
TRUCKS (XX) 71
PERCENT TRUCKS 3.8 %

Peak hour factor = 0.94

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston MASS DATE 10/21/86 DAY of WEEK TUESDAY

INTERSECTION GARRISON ST / HUNTINGTON AVE JOB No. 1647



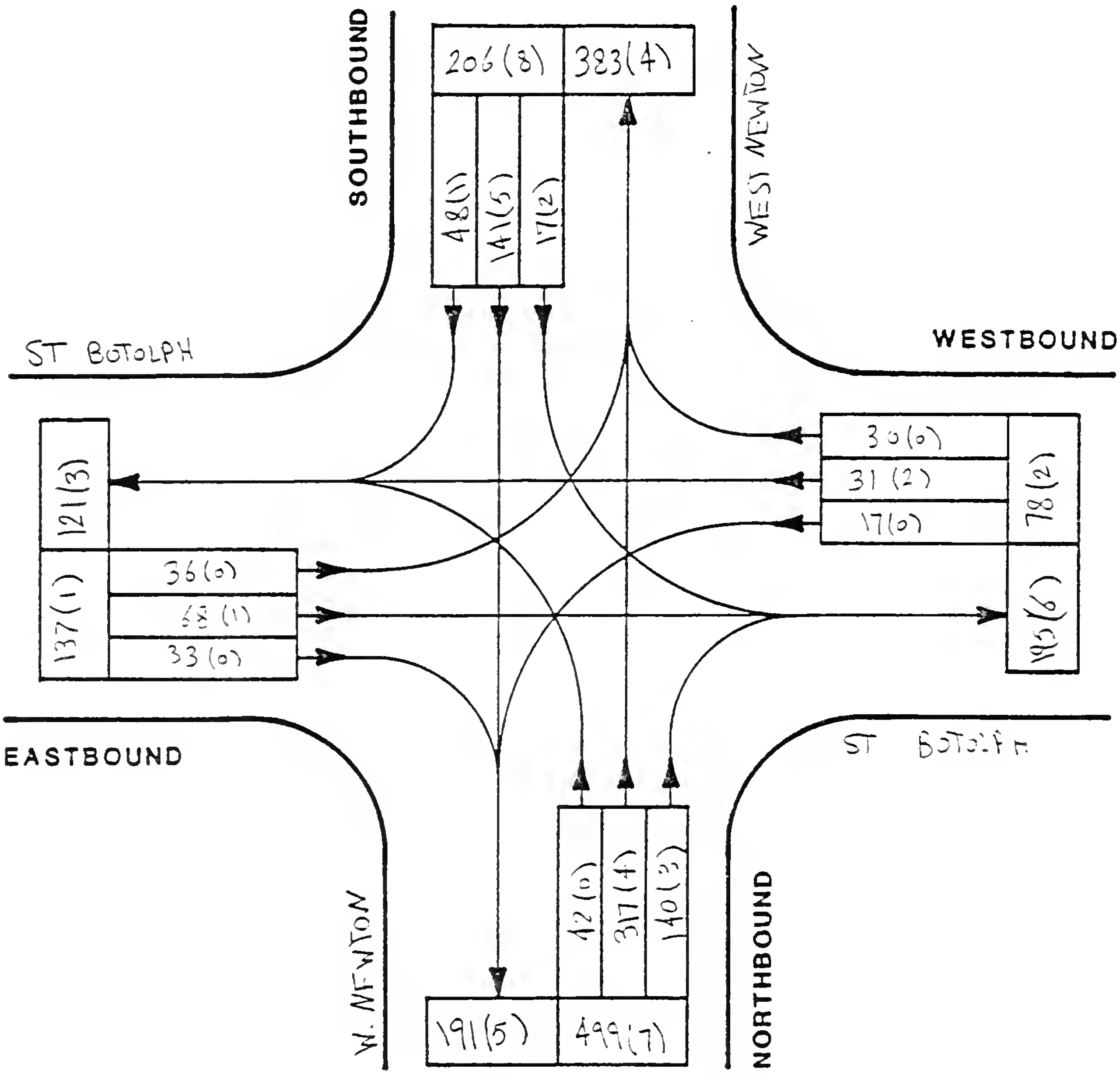
STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
[illegible] WESTBOUND	1332(34)	57.49	PM PEAK HOUR
[illegible]	893(18)	38.54	
[illegible]	92(2)	3.97	4:45 PM - 5:45 PM
			VEHICLES COUNTED
			ALL VEHICLES XXX 2317
			TRUCKS (XX) 54
TOTAL	2317(54)	100	PERCENT TRUCKS 2.3 %

PEAK HOUR FACTOR 0.94

60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston Mass DATE 10/24/86 DAY of WEEK FRIDAY
INTERSECTION W Newton / St Botolph JOB No. 1547



STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
St Botolph Eastbound	137 (1)	14.89	AM Peak Hour
St Botolph Westbound	78 (2)	8.48	
West Newton Northbound	499 (7)	54.24	7:30 AM - 8:30 AM
West Newton Southbound	206 (8)	22.39	
			VEHICLES COUNTED
			ALL VEHICLES XXX 920
			TRUCKS (XX) 18
TOTAL	920 (18)	100	PERCENT TRUCKS 1.9[illegible] %

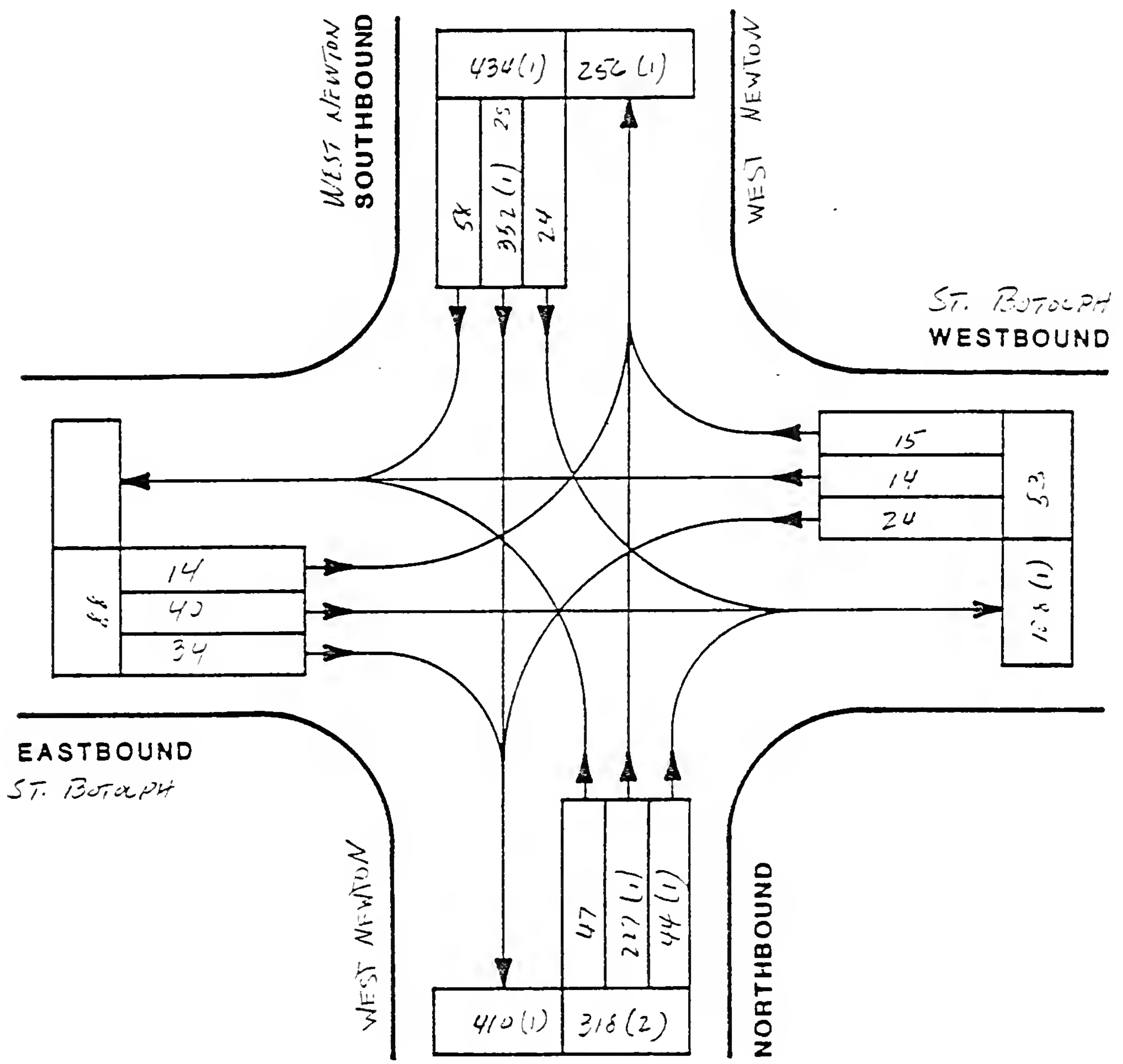
PEAK HOUR FACTOR 0.95

Consulting Engineers & Planners
60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston, Mass DATE 10/24/86 DAY of WEEK Friday

INTERSECTION West Newton / St Botolph St JOB No. 1647



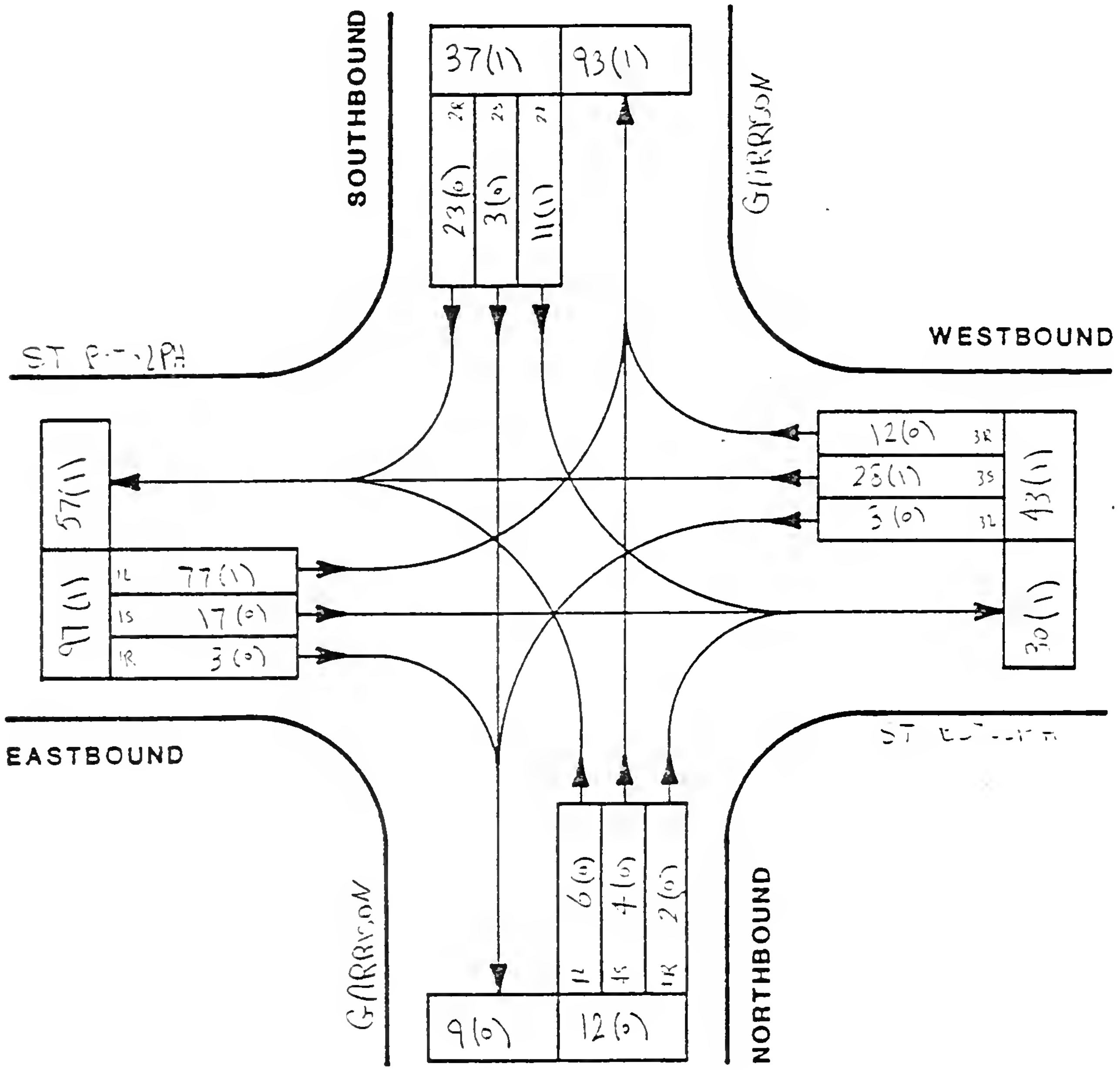
STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
West Newton NB	318 (2)	36 %	PM PEAK HOUR
West Newton SB	434 (1)	49 %	
St. Botolph EB	88	10 %	[illegible]
St. Botolph WB	53	6 %	
			VEHICLES COUNTED
			ALL VEHICLES XXX [illegible]
			TRUCKS (XX) 3
TOTAL	893	101 %	PERCENT TRUCKS [illegible] %

60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston Mass DATE 10/20/86 DAY of WEEK MON

INTERSECTION GARRISON / ST BOTOLPH JOB No. 1647



STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
ST BOTOLPH EASTBOUND	97 (1)	51.32	PM PEAK HOUR
ST BOTOLPH WESTBOUND	43 (1)	22.75	
GARRISON NORTHBOUND	12 (0)	6.35	4:30 PM - 5:30 PM
GARRISON SOUTHBOUND	37 (1)	19.58	
			VEHICLES COUNTED
			ALL VEHICLES XXX 189
			TRUCKS (XX) 3
TOTAL	189 (3)	100	PERCENT TRUCKS 1.6 %

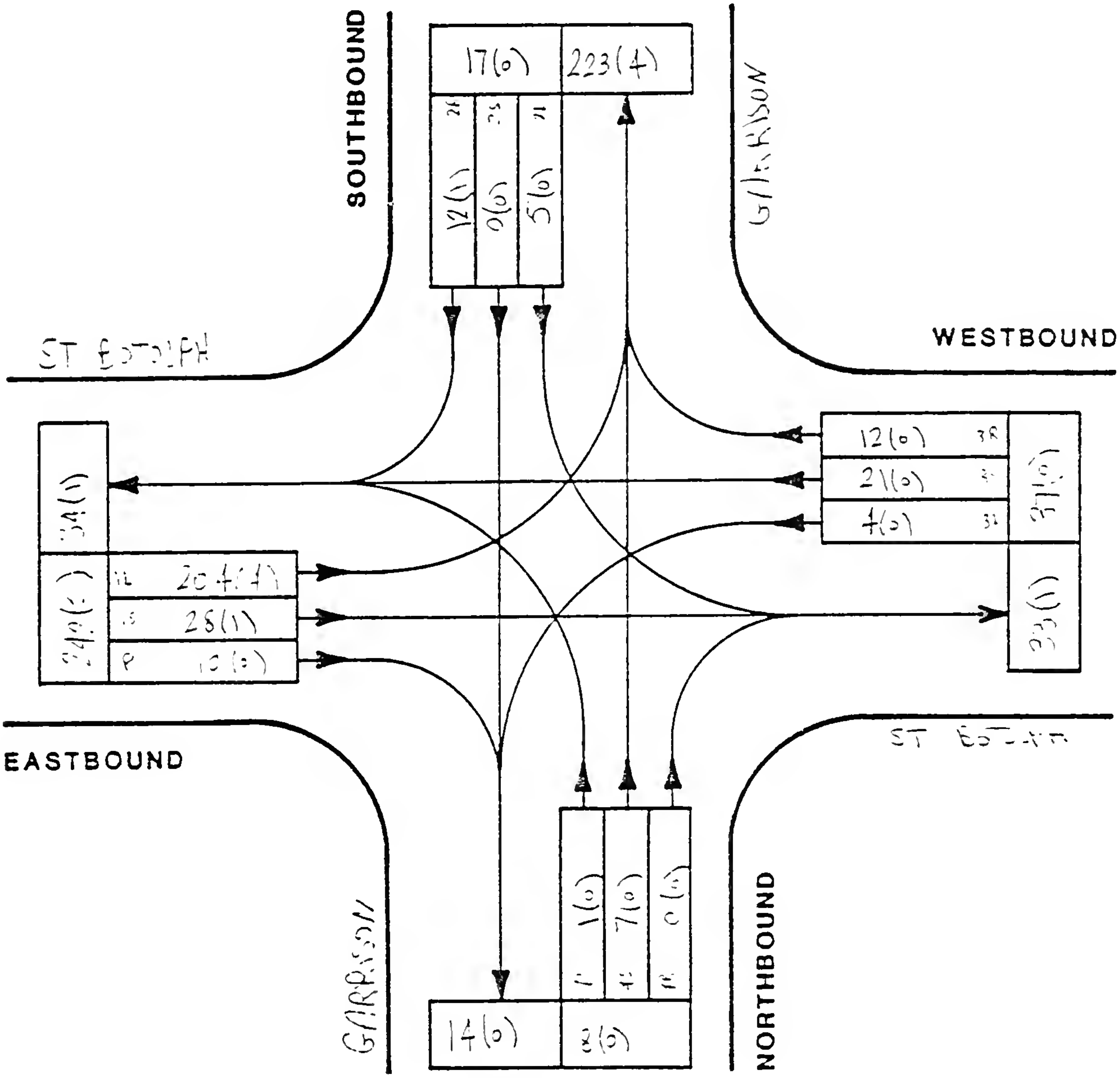
PEAK HOUR FACTOR 0.80

60 Birmingham Parkway, Boston, MA 02135
617/783-7000

INTERSECTION TURNING MOVEMENT COUNT

CITY Boston Mass DATE [illegible] DAY of WEEK Tuesday

INTERSECTION St. Botolph / Garrison JOB No. 1447



STREET	ENTERING VOLUME	PERCENT OF FLOW	TIME of COUNT
[illegible]	242 (5)	79.61	AM PEAK HOUR
[illegible]	37 (0)	12.17	
[illegible]	8 (0)	2.63	7.45 AM – 8.45 AM
[illegible]	17 (0)	5.59	
			VEHICLES COUNTED
			ALL VEHICLES XXX 304
			TRUCKS (XX) 5
TOTAL	304 (5)	100	PERCENT TRUCKS 1.6 %

PEAK HOUR [illegible]

VANASSE HANSEN ASSOCIATES
60 BIRMINGHAM PARKWAY
BOSTON, MA 02135

INTERSECTION TURNING MOVEMENT CALCULATION FORM

DATE OF REPORT: 24-Oct

CITY:	BOSTON, MA	JOB NAME:	UIDC PARCEL ONE
INTERSECTION:	HUNTINGTON AVE & HARCOURT STREET	JOB #:	1647
CALCULATED BY:	WLS	WEEKDAY:	THURSDAY
DATE OF COUNT:	OCT 23, 1986		

2 AXLE VEHICLES	HUNTINGTON AVENUE EASTBOUND	MOVE ONE			RING RD	MOVE TWO	SERV RD WB		HARCOURT ST	MOVE THREE	HUNT AVE WB MAIN LINE	MOVE FOUR		CUMULAT
TIME PERIOD	UTURN 1	UTURN 2	LEFT	RIGHT	RIGHT-N	RIGHT-W	THRU	RIGHT	LEFT	RIGHT	LEFT	UTURN	SUBTOTAL	ONE H
04:00 - 04:15	0												0	SUBTOT
04:15 - 04:30	9	9	21	6	24	30	25	15	7	0	3	19	168	
04:30 - 04:45	8	4	22	3	14	18	34	8	2	1	5	24	143	
04:45 - 05:00	3	11	26	4	17	23	37	19	2	1	1	27	171	
05:00 - 05:15	1	7	17	1	13	33	31	26	8	2	3	35	177	
05:15 - 05:30	2	13	25	3	20	50	76	33	5	1	4	30	262	
05:30 - 05:45	3	16	20	2	20	38	66	29	2	0	2	22	220	
05:45 - 06:00													0	
TOTALS	26	60	131	19	108	192	269	130	26	5	18	157	1141	

TRUCKS & BUSES	HUNTINGTON AVENUE EASTBOUND				RING RD		SERV RD WB		HARCOURT ST		HUNT AVE WB		SUBTOTAL	CUMULAT
TIME PERIOD	UTURN 1	UTURN 2	LEFT	RIGHT	RIGHT-N	RIGHT-W	THRU	RIGHT	LEFT	RIGHT	LEFT	UTURN		ONE H
04:00 - 04:15													0	TOT
04:15 - 04:30													0	
04:30 - 04:45							1						1	
04:45 - 05:00					0	1	1	2	0	1			5	
05:00 - 05:15					0	1	2	1					4	
05:15 - 05:30					0	1	5				1		7	
05:30 - 05:45					0	3	2	3					8	
05:45 - 06:00								2	0	1			3	
TOTALS	0	0	0	0	0	6	11	8	0	2	1	0	28	

		0			RING RD			HARCOURT ST			0		
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTALS
PEAK HOUR TOTALS	9	47	88	10	70	150	220	113	17	5	11	114	854
PEAK HOUR TRUCKS	0	0	0	0	0	6	10	6	0	1	1	0	24

PM PEAK HOUR: 04:45 - 05:45

PEAK HOUR FACTOR: 0.79 PERCENT TRUCKS: 2.8%

	APPR. #1	APPR. #2	APPR. #3	APPR. #4	TOTAL
ENTERING VOLUME	144	230	350	130	854
PERCENT OF TOTAL	16.9%	26.9%	41.0%	15.2%	100%

VANASSE HANGEN ASSOCIATES
60 BIRMINGHAM PARKWAY
BOSTON, MA 02135

INTERSECTION TURNING MOVEMENT CALCULATION FORM

DATE OF REPORT: 23-Oct

CITY:	BOSTON, MA	JOB NAME:	UIDC PARCEL ONE
INTERSECTION:	HUNTINGTON AVE & HARCOURT ST	JOB #:	1647
CALCULATED BY:	WLS	WEEKDAY:	THURSDAY
DATE OF COUNT:	OCT 23, 1986		

2 AXLE VEHICLES	HUNTINGTON AVENUE EASTBOUND				RING RD	HUNT SERV RD WB		HARCOURT ST		HUNT AVE WB MAIN LINE			SUBTOTAL	CUMULATIVE
TIME PERIOD	UTURN 1	UTURN2	LEFT	RIGHT	RIGHT	THRU	RIGHT	LEFT	RIGHT	LEFT	U-TURN			ONE HOUR SUBTOTALS
07:00 - 07:15													0	
07:15 - 07:30													0	
07:30 - 07:45	3	51	15	5	20	48	8	3	1	4	8		166	
07:45 - 08:00	2	41	8	1	21	54	8	0	2	5	4		146	312
08:00 - 08:15	2	51	16	7	30	58	2	0	5	6	5		182	494
08:15 - 08:30	1	34	11	2	21	37	10	1	3	3	9		132	626
08:30 - 08:45	1	42	13	1	19	33	6	0	5	1	13		138	598
08:45 - 09:00	2	28	10	2	16	29	7	0	3	6	8		111	563
TOTALS	11	247	73	18	126	259	41	4	19	25	52	~ 0	975	

TRUCKS & BUSES	HUNTINGTON AVENUE EASTBOUND				RING RD	HUNT SERV RD WB		HARCOURT ST		HUNT AVE WB MAIN LINE			SUBTOTAL	CUMULATIVE
TIME PERIOD	UTURN 1	UTURN2	LEFT	RIGHT	RIGHT	THRU	RIGHT	LEFT	RIGHT	LEFT	U-TURN			ONE HOUR TOTALS
07:00 - 07:15													0	
07:15 - 07:30													0	
07:30 - 07:45				1	1	3	4		1				10	
07:45 - 08:00						1	4		1				6	328
08:00 - 08:15			1	3		3	3	0	1	2			13	523
08:15 - 08:30				1	1	2	3	0	1	1			9	664
08:30 - 08:45		1		2		1	2	2	5	1			14	640
08:45 - 09:00		1		1		2	4	0		2			10	609
TOTALS	0	2	1	8	2	12	20	2	9	6	0	0	62	
													TOTALS	

		0			0			0					
	UTURN 1	UTURN2	LEFT	RIGHT	RIGHT	THRU	RIGHT	LEFT	RIGHT	LEFT	U-TURN	RIGHT	
PEAK HOUR TOTALS	8	177	51	20	94	206	42	4	15	21	26	0	664
PEAK HOUR TRUCKS	0	0	1	5	2	9	14	0	4	3	0	0	38

AM PEAK HOUR: 07:30 - 08:30

PEAK HOUR FACTOR: 0.85 PERCENT TRUCKS: 5.7%

	APPR. #1	APPR. #2	APPR. #3	APPR. #4	TOTAL
ENTERING VOLUME	236	320	61	47	664
PERCENT OF TOTAL	35.5%	48.2%	9.2%	7.1%	100%

SIGNALIZED INTERSECTION ANALYSIS RESULTS-SUMMARY TABLE

25-Nov UIDC PARCEL ONE SUMMARY OF SIGNALIZED INTERSECTION ANALYSIS RESULTS

NOTE: WHERE APPROPRIATE, THE WORST CONDITION WAS SELECTED

INTERSECTION	EASTBOUND DELAY	LOS	V/C	WESTBOUND DELAY	LOS	V/C	NORTHBOUND DELAY	LOS	V/C	SOUTHBOUND DELAY	LOS	V/C	OVERALL DELAY	LOS	V/C
MASS @ ST BOTOLPH															
AM EXISTING	24.3	C	0.35	24.8	C	0.39	34	D	1.01	7.6	B	0.58	23.4	C	0.71
AM NO-BUILD	24.3	C	0.35	24.8	C	0.39	47.4	E	1.05	7.6	B	0.58	31.2	D	0.74
CHANGE	0		0	0		0	13.4		0.04	0		0	7.8		0.03
AM BUILD	24.3	C	0.35	24.8	C	0.39	NA	F	1.14	9	B	0.61	51.9	E	0.79
CHANGE	0		0	0		0			0.09	1.4		0.03	20.7		0.05
PM EXISTING	37.6	D	0.79	32.2	D	0.67	48.4	E	1.06	7.6	B	0.59	31.4	D	0.84
PM NO-BUILD	37.6	D	0.79	32.2	D	0.67	56.6	E	1.08	7.6	B	0.59	35.8	D	0.86
CHANGE	0		0	0		0	NA		0.02	0		0	4.4		-0.02
PM BUILD	37.6	D	0.79	NA	F	1.05	56.6	E	1.08	7.6	B	0.59	40.5	E	0.93
CHANGE	0		0			0.38			0	0		0	4.7		0.07
MASS @ HUNTINGTON															
AM EXISTING	35	D	0.72	28.4	D	0.63	6.1	B	0.62	4.6	A	0.46	9.4	B	0.63
AM NO-BUILD	38.1	D	0.78	32.9	D	0.73	6.7	B	0.67	4.8	A	0.53	10.4	B	0.69
CHANGE	3.1		0.06	4.5		0.1	0.6		0.05	0.2		0.07	1		0.06
AM BUILD	38.1	D	0.78	32.9	D	0.73	6.8	B	0.68	5	B	0.62	10.6	B	0.70
CHANGE	0		0	0		0	0.1		0.01	0.2		0.09	0.2		0.01
PM EXISTING	31.8	D	0.63	39.4	E	0.82	7.5	B	0.72	4	A	0.38	11	B	0.72
PM NO-BUILD	31.8	D	0.63	39.4	E	0.82	8.3	B	0.77	4.3	A	0.45	11.3	B	0.75
CHANGE	0		0	0		0	0.8		0.05	0.3		0.07	0.3		0.03
PM BUILD	31.8	D	0.63	52.4	E	0.93	8.3	B	0.77	4.3	A	0.45	13	B	0.77
CHANGE	0		0	13		0.11	0		0	0		0	1.7		0.02
W.NEWTON/BELVEDERE @ HUNTINGTON															
AM EXISTING	14.1	B	0.57	12.7	B	0.47	40.7	E	0.91	21.7	C	0.6	18.6	C	0.69
AM NO-BUILD	15.9	C	0.62	13	B	0.52	58.1	E	1	24.9	D	0.7	22.6	C	0.75
CHANGE	1.8		0.05	0.3		0.05	17.4		0.09	3.2		0.1	4		0.06
AM BUILD	16.1	C	0.64	13.4	B	0.55	58.1	E	1	24.9	D	0.7	22.7	C	0.76
CHANGE	0.2		0.02	0.4		0.03	0		0	0		0	0.1		0.01
PM EXISTING	15.9	C	0.64	17.6	C	0.78	27.6	D	0.74	20.4	C	0.56	18.3	C	0.75
PM NO-BUILD	16.1	C	0.66	17.7	C	0.78	46	E	0.92	20.4	C	0.56	20.2	C	0.75
CHANGE	0.2		0.02	0.1		0	18.4		0.18	0		0	1.9		0
PM BUILD	16.1	C	0.66	19.5	C	0.86	0.46	E	0.92	20.4	C	0.56	20.9	C	0.85
CHANGE	0		0	1.8		0.08	-45.54		0	0		0	0.7		0.1
BOYLSTON & MASS AVE															
AM EXISTING	32	D	0.89	16.2	C	0.27	9.7	B	0.47	10.8	B	0.73	15.6	C	0.8
AM NO-BUILD	52.1	E	1.02	16.2	C	0.27	10.2	B	0.54	13.3	B	0.73	21.8	C	0.83
CHANGE	20.1		0.13	0		0	0.5		0.07	2.5		0	6.2		0.03
AM BUILD	NA	F	1.05	16.2	C	0.27	10.2	B	0.54	13.7	B	0.74	24.3	C	0.85
CHANGE	NA		0.03	0		0	0		0	0.4		0.01	2.5		0.02
PM EXISTING	32.1	D	0.89	16.4	C	0.33	9.4	B	0.43	11.1	B	0.75	15.8	C	0.81
PM NO-BUILD	36.8	D	0.94	16.9	C	0.41	9.6	B	0.46	12	B	0.78	17.3	C	0.85
CHANGE	4.7		0.05	0.5		0.08	0.2		0.03	0.9		0.03	1.5		0.04
PM BUILD	36.8	D	0.94	16.9	C	0.41	9.6	B	0.46	12	B	0.78	17.3	C	0.85
CHANGE	0		0	0		0	0		0	0		0	0		0

INTERSECTION	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			OVERALL		
	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C
COLUMBUS & MASS AVE															
AM EXISTING	33.6	D	0.54	17.3	C	0.66	10.7	B	0.79	11.5	B	0.77	15.9	C	0.77
AM NO-BUILD	59.4	E	1.17	18.5	C	0.73	14.6	B	0.88	11.5	B	0.77	22.3	C	0.88
CHANGE	25.8		0.63	1.2		0.07	3.9		0.09	0	F	0	6.4	F	0.11
AM BUILD	NA	F	1.19	23	C	0.87	18.2	C	0.93	11.5	B	0.77	25.3	D	0.92
CHANGE			0.02	4.5		0.14	3.6		0.05	0		0	3		0.04
PM EXISTING	NA	F	1.4	22.2	C	0.79	9.6	B	0.73	38.1	D	1.03	NA	E	0.99
PM NO-BUILD	NA	F	1.59	55.9	E	1.15	10.2	B	0.77	53.3	F	1.07	NA	F	1.08
CHANGE			0.19	33.7		0.36	0.6		0.04	15.2		0.04			0.09
PM BUILD	NA	F	1.59	NA	F	1.15	10.2	B	0.77	53.3	E	1.07	NA	F	1.08
CHANGE			0			0	0		0			0			0
COLUMBUS & W.NEWTON															
AM EXISTING	6.7	B	0.44	5	A	0.4	20.1	C	0.53	33.6	D	0.86	11.5	B	0.56
AM NO-BUILD	6.9	B	0.52	5.3	B	0.47	21.2	C	0.58	33.6	D	0.86	15.5	B	0.67
CHANGE	0.2		0.08	0.3		0.07	1.1		0.05	0		0	4		0.11
AM BUILD	6.9	B	0.52	5.3	B	0.47	21.2	C	0.58	33.6	D	0.86	15.5	B	0.67
CHANGE	0		0	0		0	0		0	0		0	0		0
PM EXISTING	2.1	A	0.27	6.3	B	0.51	15.9	C	0.44	NA	F	1.51	NA	F	0.67
PM NO-BUILD	2.1	A	0.3	6.8	B	0.59	15.9	C	0.44	NA	F	1.53	NA	F	0.72
CHANGE	0		0.03	0.5		0.08	0		0	NA		0.02			0.05
PM BUILD	2.2	A	0.31	8.1	B	0.63	15.9	C	0.44	NA	F	1.53	NA	F	0.74
CHANGE	0.1		0.01	1.3		0.04	0		0	NA		0			0.02
DARTMOUTH & ST.JAMES/HUNTINGTON															
AM EXISTING				10.3	B	0.52	14.5	B	0.75	7.9	B	0.05	12.7	B	0.63
AM NO-BUILD				10.9	C	0.6	17.1	C	0.83	7.9	B	0.05	14.5	B	0.72
CHANGE				0.6		0.08	2.6		0.08	0		0	1.8		0.09
AM BUILD				12.5	B	0.61	17.1	C	0.83	7.9	B	0.05	15.1	C	0.72
CHANGE				1.6		0.01	0		0	0		0	0.6		0
PM EXISTING				15	C	0.78	11.6	B	0.45	7.3	B	0.15	13	B	0.61
PM NO-BUILD				18.8	C	0.86	16.3	C	0.83	8.5	B	0.2	16.7	C	0.85
CHANGE				3.8		0.08	4.7		0.38	1.2		0.05	3.7		0.24
PM BUILD				18.8	C	0.86	16.9	C	0.85	8.5	B	0.2	17	C	0.86
CHANGE				0		0	0.6		0.02	0		0	0.3		0.01
HUNTINGTON & HARCOURT,RING															
AM EXISTING	5.8	B	0.62	4.7	A	0.32	29.5	D	0.1	15.3	C	0.23	5.9	B	0.46
AM NO-BUILD	5.7	B	0.63	4.7	A	0.33	29.5	D	0.1	15.3	C	0.22	5.9	B	0.49
CHANGE	-0.1		0.01	0		0.01	0		0	0		-0.01	0		0.03
AM BUILD	6	B	0.65	4.7	A	0.33	29.5	D	0.1	15.3	C	0.22	5.9	B	0.49
CHANGE	0.3		0.02	0		0	0		0	0		0	0		0
PM EXISTING	3.8	A	0.38	8	B	0.85	29.3	D	0.03	17.7	C	0.53	7.3	B	0.63
PM NO-BUILD	3.8	A	0.38	8	B	0.85	29.3	D	0.03	17.7	C	0.53	7.3	B	0.63
CHANGE	0		0	0		0	0		0	0		0	0		0
PM BUILD	4.4	A	0.46	8	B	0.85	29.3	D	0.03	19.5	C	0.64	7.8	B	0.66
CHANGE	0.6		0.08	0		0	0		0	1.8		0.11	0.5		0.03

INTERSECTION	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			OVERALL		
	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C
COLUBUS @ DARTMOUTH															
AM EXISTING	10.5	B	0.67	9.1	B	0.48	21.8	C	0.85	11.4	B	0.31	12.4	B	0.72
AM NO-BUILD	24.2	C	0.95	9.7	B	0.67	NA	F	1.52	13.4	B	0.58	NA	F	1.14
CHANGE			0.28	0.6		0.19			0.67	2		-0.23			0.42
AM BUILD	43.1	E	1.05	9.7	B	0.67	NA	F	1.52	13.4	B	0.58	NA	F	1.18
CHANGE			0.1	0		0			0	0		0			0.04
PM EXISTING	7.2	B	0.36	6.9	B	0.37	21.1	C	0.82	6.6	B	0.37	9.2	B	0.51
PM NO-BUILD	7.5	B	0.42	7.1	B	0.43	18.8	C	0.78	7.8	B	0.56	9.3	B	0.52
CHANGE	0.3		0.06	0.2		0.06	-2.3		-0.0	1.2		0.19	0.1		0.01
PM BUILD	7.5	B	0.42	7.1	B	0.43	19.9	C	0.8	8.1	B	0.59	9.4	B	0.53
CHANGE	0		0	0		0	1.1		0.02	0.3		0.03	0.1		0.01
DARTMOUTH @ STUART															
AM EXISTING	12.6	B	0.78				10.8	B	0.5				12.2	B	0.63
AM NO-BUILD	15	B	0.86				13.1	B	0.69				14.5	B	0.77
CHANGE	2.4		0.08				2.3		0.19				2.3		0.14
AM BUILD	15	B	0.86				13.1	B	0.69				14.5	B	0.77
CHANGE	0		0	0		0	0		0	0		0	0		0
PM EXISTING	10.7	B	0.8				10.2	B	0.42				10.6	B	0.63
PM NO-BUILD	35.9	D	1.1				11.4	B	0.56				30.9	D	0.81
CHANGE	25.2		0.3				1.2		0.14				20.3		0.18
PM BUILD	41.1	E	1.12				11.4	B	0.56				35.1	D	0.82
CHANGE	5.2		0.02				0		0				4.2		0.01

SIGNALIZED INTERSECTION ANALYSIS RESULTS-EXISTING CONDITIONS

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: UTDC EXISTING REVISED WITH SB LT REMOVED

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.19	245	.79	37.6	D	EB	37.6	D
WB LTR		.16	193	.67	32.2	D	WB	32.2	D
NB LTR	*	.58	1274	1.06	48.4	E	NB	48.4	E
SB LTR		.34	1733	.59	7.6	B	SB	7.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.77	.84	31.4	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	30	71	111	0
THRU	26	24	1037	892
RIGHT	129	31	95	46
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1647-BASE 10:20 AM

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.08	241	.35	24.1	C	EB	24.1	C
WB LTR	*	.09	246	.39	24.8	C	WB	24.8	C
NB LTR	*	.55	1346	1.01	34	D	NB	34	D
SB LTR		.34	1577	.58	7.6	B	SB	7.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.65	.71	23.4	C

D) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	14	38	91	20
THRU	11	27	1129	814
RIGHT	58	28	95	59
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: DIDC EXISTING (REVISED) VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.08	179	.63	36.5	D			
EB TR	.	.07	143	.55	25.1	D	EB	31.8	D
WB LTR	*	.1	299	.82	39.4	D	WB	39.4	D
NB LTR	*	.48	1593	.72	7.5	B	NB	7.5	B
SB LTR		.26	2627	.38	4	A	SB	4	A

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.66	.72	11	B

D) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	109	37	85	16
THRU	19	45	973	870
RIGHT	57	145	38	90
R-O-R	0	0	41	90

R O R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION E.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC. INFO: 1647-BASE 10:50 AM

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.09	129	.72	41	E			
EB TR		.06	146	.47	21.7	C	EB	35	D
WB LT	*	.08	176	.63	30.1	D	WB	28.4	D
WB R		.07	132	.58	25.9	D	WB	28.4	D
NB LTR	*	.41	1899	.62	6.1	B	NB	6.1	B
SB L		.28	174	.41	6.7	B			
SB TR		.31	2041	.46	4.4	A	SB	4.6	A

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.57	.63	9.4	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	125	83	12	70
THRU	20	24	993	791
RIGHT	46	74	139	151
R-O-R	0	0	70	76

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND W.NEWTON/BELVEDE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: EXISTING VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L		.12	312	.53	24.8	C			
EB TR		.26	1138	.64	13.9	B	EB	15.9	C
WB L	*	.17	312	.78	33.1	D			
WB T	*	.28	1305	.68	14.4	B	WB	17.6	C
WB R		.09	469	.22	9.4	B	WB	17.6	C
NB LTR	*	.22	316	.74	27.6	D	NB	27.6	D
SB L		.17	270	.56	22	C			
SB T		.14	462	.46	20	C	SB	20.4	C
SB R		.05	366	.18	17.7	C	SB	20.4	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.68	.75	18.3	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	156	228	40	141
THRU	596	796	146	200
RIGHT	54	96	69	122
R O R	0	0	35	61

R O R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND W.NEWTON/BELV.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: UTDC EXISTING CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.12	312	.52	24.7	C			
EB TR	*	.23	1150	.57	11.5	B	EB	14.1	B
WB L		.1	312	.45	23.7	C			
WB T		.19	1305	.47	10.7	B	WB	12.7	B
WB R		.08	469	.19	9.3	B	WB	12.7	B
NB LTR	*	.27	406	.91	40.4	E	NB	40.4	E
SB L		.18	182	.6	24.2	C			
SB T		.04	462	.15	17.5	C	SB	21.7	C
SB R		0	1423	0	0	A	SB	21.7	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.62	.69	18.6	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	153	131	31	102
THRU	562	518	241	63
RIGHT	20	82	105	61
R-O-R	0	0	35	61

R-O R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: NLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1647 BASE 10:45 AM

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP								BY APPROACH		
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	1 V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.23	784	.89	32	D	EB	32	D
WB	TR		.07	731	.27	16.2	C	WB	16.2	C
NB	TR		.23	2129	.47	9.7	B	NB	9.7	B
SB	Lper			180	.56					
SB	Lpro		.11	302	.56	24.7	C			
SB	T	*	.52	1177	.73	6.9	B	SB	10.8	B
SB	R		.06	709	.09	1	A	SB	10.8	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.75	.8	15.6	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	60	0	0	261
THRU	500	95	781	800
RIGHT	111	89	110	59
R-O-R	0	0	0	0

. R-O-R = RIGHT ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: NLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1647-BASE 10:45 AM

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP								BY APPROACH		
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.23	776	.89	32.1	D	EB	32.1	D
WB	TR		.08	726	.33	16.4	C	WB	16.4	C
NB	TR		.21	2107	.41	9.4	B	NB	9.4	B
SB	Lper			222	.56					
SB	Lpro		.11	302	.56	23.8	C			
SB	T	*	.53	1127	.75	7.1	B	SB	11.1	B
SB	R		.06	687	.08	3	A	SB	11.1	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.76	.81	15.8	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	56	0	0	286
THRU	500	118	677	815
RIGHT	136	101	123	55
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/85
AREA TYPE: CBD
MISC. INFO: EXISTING REVISED VOLUMES WITH SC LTs REMOVED FOR MODELLING PURPOSES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.25	241	1	N.A.	F			
EB TR		.13	794	.54	14.7	B	EB	33.6	D
WB L		.16	109	.66	25.9	D			
WB TR		.11	747	.42	13.9	B	WB	17.3	C
NB Lper			90	.07					
NB Lpro		.01	254	.06	19	C			
NB TR	*	.44	1677	.79	10.5	B	NB	10.7	B
SB LTR		.38	1555	.77	11.5	B	SB	11.5	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.69	.77	15.9	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	217	112	21	0
THRU	344	195	1017	840
RIGHT	23	73	124	104
R O R	0	0	0	0

R O R - RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: WIDE EXISTING WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.35	162	1.4	N.A.	F			
EB TR		.08	794	.3	13.4	B	EB	N.A.	F
WB L		.2	257	.79	31.6	D			
WB TR		.18	778	.7	18.7	C	WB	22.2	C
NB Lper			90	.1					
NB Lpro	*	.02	261	.11	19.3	C			
NB TR		.4	1677	.73	9.3	B	NB	9.6	B
SB LTR	*	.51	1253	1.03	38.1	D	SB	38.1	D

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.88	.99		E

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	201	181	33	52
THRU	181	373	921	914
RIGHT	22	91	112	126
R-O R	0	0	0	0

R O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC. INFO: EXISTING VOLUMES (REVISED)

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH (BY APPROACH)	STOPPED DELAY (SEC/VEH)	LOS
EB Lper			435	.32					
EB Lpro		.04	160	.37	13.1	B			
EB T	*	.3	975	.44	3	A	EB	6.1	B
WB TR		.22	1364	.4	5	A	WB	5	A
NB LTR		.16	361	.61	20.1	C	NB	20.1	C
SB LR	*	.22	256	.86	33.6	D	SB	33.6	D

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.52	.56	11.5	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	207	0	18	79
THRU	400	346	154	0
RIGHT	0	138	41	128
R-O R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: USE BASE WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH (BY APPROACH)	STOPPED DELAY (SEC/VEH)	LOS
EB LT		.18	1674	.27	2.1	A	EB	2.1	A
WB TR	*	.25	1188	.51	6.3	B	WB	6.3	B
NB LTR		.11	310	.44	15.9	C	NB	15.9	C
SB LR	*	.37	290	1.51	N.A.	F	SB	N.A.	F

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.62	.67	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	120	0	11	150
THRU	282	421	79	0
RIGHT	0	123	58	260
R-O R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/3/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE #1617 BASE CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
WB TR	*	.36	1858	.78	15	C	WB	15	C
NB L		.21	1290	.45	13.7	B			
NB T	*	.21	1508	.45	9.8	B	NB	11.6	B
NB R		0	751	0	0	A	NB	11.6	B
SB R		.07	1770	.15	8.1	B	SB	8.1	B

(BY LANE GROUP: first seven columns; BY APPROACH: last three columns)

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.57	.61	13	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	494	0
THRU	0	925	579	0
RIGHT	0	251	0	215
R O R	0	0	0	0

R O R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1617-BASE 1:15 PM

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
WB TR	*	.25	2128	.52	10.1	B	WB	10.1	B
NB L		.23	1290	.49	14.1	B			
NB T	*	.35	1508	.75	14.7	B	NB	14.5	B
NB R		0	751	0	0	A	NB	14.5	B
SB R		.02	1770	.05	7.9	B	SB	7.9	B

(BY LANE GROUP: first seven columns; BY APPROACH: last three columns)

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.6	.63	12.7	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	542	0
THRU	0	802	964	0
RIGHT	0	109	0	25
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

[illegible]

[illegible]

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: BES
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC. INFO: 1647-BASE 12:15 FR

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP								BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.11	407	.38	19.[illegible]	C			
EB TR		.29	[illegible]330	.36	1	A	EB	5.0	A
WB L		.09	156	.05	52.9	E			
WB T	*	.3	2926	.47	4.1	A	WB	8	B
WB R		.09	854	.14	3.1	A			
NB R		0	165	.03	29.3	D	NB	29.3	D
SB R	*	.16	445	.53	17.7	C	SB	17.7	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.557	.653	7.4	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	99	125	0	0
THRU	734	1192	0	0
RIGHT	10	113	5	250
RTOR	0	0	0	0

RTOR = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR, SEE SECTION I.

[illegible]

[illegible]

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: BES
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC. INFO: 1647-BASE 12:15 FR

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP								BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L		.18	407	.62	22.6	C			
EB TR	*	.31	2[illegible]06	.8	[illegible]	A	EB	5.0	B
WB L	*	.04	156	.32	28.4	D			
WB T		.15	2926	.23	3.[illegible]	A	WB	4.[illegible]	A
WB R		.12	854	.31	3.6	A			
NB R		.01	165	.1	29.5	D	NB	29.5	D
SB R	*	.07	445	.23	15.3	C	SB	15.3	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.413	.446	5.[illegible]	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	75	47	[illegible]	[illegible]
THRU	766	[illegible]30	0	0
RIGHT	20	[illegible]48	15	[illegible]7
RTOR	0	0	0	0

RTOR = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR, SEE SECTION I.

1985 HCM: SIGNALIZED INTERSECTIONS 1
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Vanasse / Hangen

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: MES
TIME OF ANALYSIS: AM PEAK HOUR1
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: EXISTING REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.28	1120	.67	10.5	B	EB	10.5	B
WB L		.23	245	.55	14.7	B			
WB T		.2	663	.48	7.8	B	WB	9.1	B
WB R		.07	617	.13	4.4	A	WB	9.1	B
NB LTR		.33	455	.85	21.8	C	NB	21.8	C
SB LTR	*	.38	484	.71	11.4	B	SB	11.4	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.66	.72	12.4	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	20	127	36	135
THRU	500	297	294	140
RIGHT	156	76	31	50
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS I
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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: MES
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: UIDC REVISED VOLUMES EXISTING CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.15	1042	.36	7.2	B	EB	7.2	B
WB LT	*	.15	1180	.37	7.2	B	WB	6.9	B
WB R		.04	617	.09	4.3	A	WB	6.9	B
NB LTR	*	.32	399	.82	21.1	C	NB	21.1	C
SB LTR		.2	1545	.37	6.6	B	SB	6.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.47	.51	9.5	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	75	68	51	49
THRU	193	326	229	130
RIGHT	67	50	29	128
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: MLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/6/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE EXISTING CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L		.35	1165	.8	17.5	C			
EB	T		.23	1404	.53	9.2	B	EB	10.7	B
EB	R	*	.38	1219	.41	.3	A	EB	10.7	B
NB	TR	*	.2	1109	.42	10.2	B	NB	10.2	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.58	.63	10.6	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	831	0	0	0
THRU	662	0	413	0
RIGHT	465	0	77	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: MLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE BASE CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L		.33	1165	.76	16.4	C			
EB	T	*	.34	1404	.78	13.7	B	EB	12.6	B
EB	R		.28	1219	.3	.2	A	EB	12.6	B
NB	TR	*	.24	1229	.5	10.8	B	NB	10.8	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.58	.63	12.2	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	790	0	0	0
THRU	982	0	369	0
RIGHT	318	0	177	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

SIGNALIZED INTERSECTION ANALYSIS RESULTS-1989 NO-BUILD CONDITIONS

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WES
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/85
AREA TYPE: CBD
MISC. INFO: 1987 NO BUILD (3PM)

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.08	243	.35	24.3	C	EB	24.3	C
WB LTR	*	.09	246	.39	24.8	C	WB	24.8	C
NB LTR	*	.58	1346	1.05	47.4	E	NB	47.4	E
SB LTR		.34	1577	.58	7.6	B	SB	7.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.67	.74	31.2	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	14	30	91	20
THRU	11	27	1190	814
RIGHT	58	20	95	59
R O R	0	0	0	0

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen Associates

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WES
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: 1986 NO-BUILD WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.19	243	.79	37.6	D	EB	37.6	D
WB LTR		.16	193	.67	32.2	D	WB	32.2	D
NB LTR	*	.59	1287	1.00	56.6	E	NB	56.6	E
SB LTR		.34	1753	.59	7.6	B	SB	7.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.78	.86	35.8	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	30	71	111	0
THRU	26	24	1077	892
RIGHT	129	31	95	46
R O R	0	0	0	0

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1647 NO-BUILD (3PM)

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L	*	.09	179	.78	45.2	E			
EB	TR		.06	146	.47	21.7	C	EB	38.1	D
WB	LT		.08	176	.63	30.1	D	WB	32.9	D
WB	R	*	.09	132	.73	36.2	D	WB	32.9	D
NB	LTR	*	.45	1878	.67	6.7	B	NB	6.7	B
SB	L		.36	135	.53	9.6	B			
SB	TR		.31	2041	.46	4.4	A	SB	4.8	A

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.63	.69	10.4	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	135	83	17	70
THRU	20	24	1060	791
RIGHT	46	93	155	153
R-O-R	0	0	70	76

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: UTDC NO-BUILD REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L	*	.08	173	.63	36.5	D			
EB	TR		.07	143	.55	25.1	D	EB	31.8	D
WB	LTR	*	.1	299	.82	39.4	D	WB	39.4	D
NB	LTR	*	.51	1552	.77	8.3	B	NB	8.3	B
SB	LTR		.3	2314	.45	4.3	A	SB	4.3	A

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.69	.75	11.3	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	109	37	85	46
THRU	19	45	1013	870
RIGHT	57	145	41	90
R-O-R	0	0	41	90

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS   I

Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND W.NEWTON/BELVEDE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: 1547 NO BUILD 15pm

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP					BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L		.12	312	.51	21.8	C			
EB TR		.27	1138	.66	14.2	B	EB	16.1	C
WB L	*	.17	112	.78	33.1	D			
WB T	*	.29	1305	.69	11.5	B	WB	17.7	C
WB R		.09	469	.22	9.1	B	WB	17.7	C
NB LTR	*	.27	281	.92	46	E	NB	46	E
SB L		.17	266	.56	22.2	C			
SB T		.11	162	.46	20	C	SB	20.4	C
SB R		.05	366	.18	17.7	C	SB	20.4	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.73	.81	20.2	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	156	228	61	141
THRU	610	811	116	200
RIGHT	61	96	69	122
R O R	0	0	15	61

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F

1985 HCM: SIGNALIZED INTERSECTIONS   I

Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND W.NEWTON/BELV.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: UIOC NO-BUILD

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP					BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.12	312	.56	25.1	D			
EB TR	*	.25	1150	.62	13.7	B	EB	15.9	C
WB L		.11	312	.49	21.2	C			
WB T		.21	1305	.52	11.1	B	WB	11	B
WB R		.1	469	.25	9.6	B	WB	11	B
NB LTR	*	.3	410	1	58.1	E	NB	58.1	E
SB L		.21	161	.2	29.6	D			
SB T		.05	462	.16	17.6	C	SB	24.9	C
SB R		0	1423	0	0	A	SB	24.9	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.68	.75	22.6	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	164	144	48	108
THRU	611	601	265	69
RIGHT	26	111	113	67
R-O-R	0	0	40	67

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: 1647 NO-BUILD (PM)

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.26	784	1.02	52.1	E	EB	52.1	E
WB	TR		.07	734	.27	16.2	C	WB	16.2	C
NB	TR		.26	2063	.54	10.2	B	NB	10.2	B
SB	Lper			139	.73					
SB	Lpro		.15	302	.73	31.9	D			
SB	T	*	.57	1177	.73	6.9	B	SB	13.3	B
SB	R		.06	709	.09	3	A	SB	13.3	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.78	.83	21.8	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	60	0	0	310
THRU	596	95	781	800
RIGHT	143	89	202	59
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 10/30/86
AREA TYPE: CBD
MISC.INFO: JOB #1647 1989 NO-BUILD (PM)

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.24	776	.94	36.8	D	EB	36.8	D
WB	TR		.11	734	.41	16.9	C	WB	16.9	C
NB	TR		.22	2085	.46	9.6	B	NB	9.6	B
SB	Lper			201	.61					
SB	Lpro		.12	302	.61	25.4	D			
SB	T	*	.55	1127	.78	8	B	SB	12	B
SB	R		.07	687	.1	3	A	SB	12	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.8	.85	17.3	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	56	0	0	297
THRU	530	163	710	854
RIGHT	141	117	135	65
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WES
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/[illegible]/86
AREA TYPE: CBD
MISC. INFO: EIDC REPORTED REVISED VOLUMES, SPLITS REMOVED FOR ANALYSIS ONLY

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP					BY APPROACH		
EB L	*	.27	209	1.17	N.A.	F			
EB TR		.15	774	.59	15.1	C	EB	59.4	E
NB L		.18	169	.73	31	D			
NB TR		.13	75[illegible]	.51	14.6	B	NB	18.5	C
NB Lper			90	.07					
NB Lpro		.01	[illegible]	.05	19	C			
NB TR	*	.48	1577	.88	14.5	B	NB	14.6	B
SB LTR		.36	1555	.77	11.5	B	SB	11.5	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.78	.88	22.3	C

D) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	[illegible]	112	21	0
THRU	[illegible]	258	1075	840
RIGHT	[illegible]	7[illegible]	192	184
R-O-R	[illegible]	[illegible]	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS I

Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WES
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: EIDC EXISTING (REVISED) VOLUMES
No-build

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP					BY APPROACH		
EB L	*	.4	142	1.59	N.A.	F			
EB TR		.08	794	.34	13.5	B	EB	N.A.	F
NB L		.29	241	1.15	N.A.	F			
NB TR		.19	778	.75	19.7	C	NB	55.9	E
NB Lper			90	.1					
NB Lpro	*	.02	261	.11	19.3	C			
NB TR		.42	1677	.77	10	B	NB	10.2	B
SB LTR	*	.54	1224	1.07	53.3	E	SB	53.3	E

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.95	1.08	N.A.	F

D) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	201	247	33	52
THRU	205	406	961	936
RIGHT	22	91	128	126
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/85
AREA TYPE: CBD
MISC. INFO: UIDC NO BUILD WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP						BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS		APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LT		.21	1654	.3	2.1	A		EB	2.1	A
WB TR	*	.29	1108	.59	6.8	B		WB	6.8	B
NB LTR		.11	318	.44	15.9	C		NB	15.9	C
SB LR	*	.37	290	1.51	N.A.	F		SB	N.A.	F

NOTE: DELAY MEANINGLESS WHEN I > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.66	.72	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	120	0	14	157
THRU	322	483	79	0
RIGHT	0	147	38	260
R-O-R	0	0	0	0

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/10/86
AREA TYPE: CBD
MISC. INFO: NO BUILD REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP						BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS		APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB Lper			375	.44						
EB Lpro		.05	160	.44	14.5	B				
EB T	*	.35	975	.52	3.4	A		EB	6.9	B
WB TR		.27	1364	.47	5.3	B		WB	5.3	B
NB LTR		.17	361	.68	21.2	C		NB	21.2	C
SB LR	*	.26	243	1.02	N.A.	F		SB	N.A.	F

NOTE: DELAY MEANINGLESS WHEN I > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.62	.67	15.5	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	223	0	18	91
THRU	477	415	166	0
RIGHT	0	160	45	141
R-O-R	0	0	0	0

R O R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: MLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/31/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE #1647 1989-NO-BUILD (10

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP					BY APPROACH		
NB	TR *	.28	2084	.6	10.9	B	NB	10.9	B
NB	L	.24	1290	.52	14.4	B			
NB	T *	.39	1508	.83	18.5	C	NB	17.1	C
NB	R	0	754	0	0	A	NB	17.1	C
SB	R	.02	1770	.05	7.9	B	SB	7.9	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.67	.72	14.5	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	576	0
THRU	0	873	1078	0
RIGHT	0	145	0	75
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: MLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/3/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE #1647 1989-NO-BUILD (10

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP					BY APPROACH		
NB	TR *	.41	2011	.86	18.8	C	NB	18.8	C
NB	L *	.39	1290	.81	20.7	C			
NB	T	.25	1508	.54	10.5	B	NB	16.3	C
NB	R	0	751	0	0	A	NB	16.3	C
SB	R	.1	1770	.2	8.5	B	SB	8.5	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOB
	.8	.85	16.7	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	915	0
THRU	0	1183	698	0
RIGHT	0	259	0	294
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse/Hangen

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/3[illegible]/86
AREA TYPE: CBD
MISC. INFO: UIDC PARCEL ONE ([illegible]) 1989-NO BUILD

A) CAPACITY AND LEVEL OF SERVICE

			BY LANE GROUP					BY APPROACH		
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L		.17	407	.61	22.9	C			
EB	TR	*	.[illegible]	[illegible]	.41	1	A	EB	5.7	B
WB	L	*	.04	156	.13	20.5	D			
WB	T		.16	2986	.26	[illegible]	A	WB	4.7	A
WB	R		.2	[illegible]	.32	3.6	A	WB	4.7	A
NB	R		.[illegible]	165	.1	29.5	D	NB	29.5	D
SB	R	*	.[illegible]	445	.[illegible]	15.3	C	SB	15.3	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.44	.49	5.8	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	[illegible]	49	0	0
THRU	[illegible]	[illegible]	0	0
RIGHT	[illegible]	[illegible]	15	91
R-O-R	[illegible]	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/13/86
AREA TYPE: CBD
MISC. INFO: UIDC PARCEL ONE (1647) 1989-NO-BUILD

A) CAPACITY AND LEVEL OF SERVICE

			BY LANE GROUP					BY APPROACH		
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	L	*	.11	407	.38	19.2	C			
EB	TR		.3	2330	.38	1	A	EB	3.8	A
WB	L		.09	158	.85	52.9	E			
WB	T	*	.3	2986	.47	4.1	A	WB	7.9	B
WB	R		.09	854	.14	3.1	A	WB	7.9	B
NB	R		0	165	.03	29.3	D	NB	29.3	D
SB	R	*	.18	445	.53	17.7	C	SB	17.7	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.57	.63	7.3	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	144	125	0	0
THRU	748	1207	0	0
RIGHT	10	113	5	220
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: NLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: 2010 NO BUILD REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.18	790	.42	7.5	B	EB	7.5	B
WB LT	*	.18	1167	.43	7.5	B	WB	7.1	B
WB R		.02	517	.11	4.3	A	WB	7.1	B
NB LTR	*	.3	595	.78	18.8	C	NB	18.8	C
SB LTR		.3	1482	.56	7.8	B	SB	7.8	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.48	.52	9.2	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	89	68	26	83
THRU	220	376	238	377
RIGHT	67	64	26	281
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: NLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC. INFO: NO-BUILD REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.39	878	.95	24.2	C	EB	24.2	C
NB L		.27	212	.67	18.7	C			
NB T		.21	663	.5	8	B	NB	9.7	B
NB R		.11	617	.22	4.6	A	NB	9.7	B
NB LTR	*	.59	423	1.52	N.A.	F	NB	N.A.	F
SB Lper			96	.57					
SB Lpro	*	.06	163	.58	24.7	C			
SB TR		.18	716	.34	6.5	B	SB	13.4	B

NOTE: DELAY MEANINGLESS WHEN I > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	1.05	1.14	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	34	133	76	140
THRU	550	313	496	154
RIGHT	166	125	33	75
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: MLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: WIDE PARCEL ONE 1989-NO-BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.48	1165	1.1	N.A.	F			
EB T		.32	1404	.73	12.8	B	EB	35.9	D
EB R		.46	1219	.49	.4	A	EB	35.9	D
NB TR	*	.27	1337	.56	11.4	B	NB	11.4	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.75	.81	30.9	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	1144	0	0	0
THRU	[illegible]	0	591	0
RIGHT	567	0	77	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION E.

1985 HCM:SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: MLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: WIDE PARCEL ONE 1989-NO BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L		.36	1165	.81	18.1	C			
EB T	*	.38	1404	.86	17.4	C	EB	15	B
EB R		.3	1219	.33	.2	A	EB	15	B
NB TR	*	.33	1256	.69	13.1	B	NB	13.1	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.71	.77	14.5	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	848	0	0	0
THRU	1077	0	565	0
RIGHT	375	0	207	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

SIGNALIZED INTERSECTION ANALYSIS RESULTS-1989 BUILD CONDITIONS

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/85
AREA TYPE: CBD
MISC.INFO: UIDC BUILD REVISED VOLS, W/SB LTs REMOVED

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.18	222	.74	34.9	D	EB	34.9	D
WB LTR	*	.25	220	1.05	N.A.	F	WB	N.A.	F
NB LTR	*	.59	1287	1.08	56.6	E	NB	56.6	E
SB LTR		.34	1733	.59	7.6	B	SB	2.6	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.85	.93	40.5	E

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	31	71	111	0
THRU	25	24	1077	892
RIGHT	103	129	95	46
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE 1909 BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.08	243	.35	24.3	C	EB	24.3	C
WB LTR	*	.09	246	.39	24.8	C	WB	24.8	C
NB LTR	*	.63	1332	1.14	N.A.	F	NB	N.A.	F
SB LTR		.36	1577	.61	9	B	SB	9	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.72	.79	51.9	E

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	14	38	91	20
THRU	11	27	1190	814
RIGHT	58	28	118	59
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: UIDC BUILD WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
BY LANE GROUP								BY APPROACH		
EB	L	*	.00	179	.61	16.5	D			
EB	TR		.07	141	.55	25.1	D	EB	31.8	D
WB	LTR	*	.11	295	.91	52.4	E	WB	52.4	E
NB	LTR	*	.51	1552	.77	8.1	B	NB	8.1	B
SB	LTR		.3	2314	.45	4.1	A	SB	4.1	A

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.7	.77	13	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	109	39	85	46
THRU	19	45	1013	870
RIGHT	57	171	41	90
R-O-R	0	0	41	90

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/11/86
AREA TYPE: CBD
MISC.INFO: 1617 NO-BUILD (3PM)

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
BY LANE GROUP								BY APPROACH		
EB	L	*	.09	179	.78	45.2	E			
EB	TR		.06	146	.47	21.7	C	EB	38.1	D
WB	LT		.08	176	.61	30.1	D	WB	32.9	D
WB	R	*	.09	132	.71	36.2	D	WB	32.9	D
NB	LTR	*	.45	1858	.68	6.8	B	NB	6.8	B
SB	L		.42	135	.62	13	B			
SB	TR		.31	2011	.46	4.4	A	SB	5.1	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.63	.7	10.6	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	135	83	17	81
THRU	20	24	1060	791
RIGHT	46	93	155	153
R-O-R	0	0	70	76

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND N.NEWTON/BELV.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: UIDC FULL BUILD

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP						BY APPROACH		
EB	L	*	.12	312	.56	25.3	D			
EB	TR	*	.26	1150	.64	13.9	B	EB	16.1	C
WB	L		.12	312	.55	25.1	D			
WB	T		.21	1105	.52	11.1	B	WB	11.4	B
WB	R		.1	469	.25	9.6	B	WB	11.4	B
NB	LTR	*	.3	410	1	58.1	E	NB	58.1	E
SB	L		.21	164	.2	29.6	D			
SB	T		.05	462	.16	17.6	C	SB	24.9	C
SB	R		0	1421	0	0	A	SB	24.9	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.69	.76	22.7	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	164	161	48	108
THRU	633	601	265	69
RIGHT	26	111	113	67
R-O-R	0	0	40	67

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE. AND N.NEWTON/BELVEDE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE 1989 BUILD

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
		BY LANE GROUP						BY APPROACH		
EB	L		.12	312	.53	24.8	C			
EB	TR		.27	1138	.66	14.2	B	EB	16.1	C
WB	L	*	.19	312	.86	39.5	D			
WB	T	*	.3	1105	.73	15.1	C	WB	19.5	C
WB	R		.1	469	.24	9.5	B	WB	19.5	C
NB	LTR	*	.27	283	.92	46	E	NB	46	E
SB	L		.17	266	.56	22.2	C			
SB	T		.14	462	.46	20	C	SB	20.4	C
SB	R		.05	366	.18	17.7	C	SB	20.4	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.76	.85	20.9	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	156	251	64	141
THRU	610	850	146	200
RIGHT	61	106	69	122
R-O-R	0	0	15	61

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen Associates

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC. INFO: UIDC PARCEL ONE BUILD CONDITIONS

A) CAPACITY AND LEVEL OF SERVICE

				BY LANE GROUP				BY APPROACH	
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.27	704	1.05	N.A.	F	EB	N.A.	F
WB	TR		.07	734	.27	16.2	C	WB	16.2	C
NB	TR		.26	2063	.54	10.2	B	NB	10.2	D
SB	Lper			139	.74					
SB	Lpro		.15	302	.74	32.8	D			
SB	T	*	.52	1127	.73	6.9	B	SB	13.7	B
SB	R		.06	709	.09	3	A	SB	13.7	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.79	.85	24.3	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	60	0	0	316
THRU	610	95	781	803
RIGHT	151	89	202	59
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen Associates

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: [redacted] 11/6/86
AREA TYPE: CBD
MISC. INFO: JOB #1687 1989 [redacted]BUILD [redacted]

A) CAPACITY AND LEVEL OF SERVICE

				BY LANE GROUP				BY APPROACH	
LANE GROUP		CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB	TR	*	.24	776	.94	36.8	D	EB	36.8	D
WB	TR		.11	731	.41	16.9	C	WB	16.9	C
NB	TR		.22	2085	.46	9.6	B	NB	9.6	B
SB	Lper			197	.61					
SB	Lpro		.12	302	.61	25.6	D			
SB	T	*	.55	1127	.78	8	B	SB	12	B
SB	R		.07	687	.1	3	A	SB	12	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.8	.85	17.3	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	56	0	0	297
THRU	530	163	720	854
RIGHT	141	117	135	65
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse Hangen Brustlin Inc

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: March 11, 1987
AREA TYPE: CBD
MISC. INFO: UIDC BUILD-REVISED VOLUMES, SB LT's REMOVED FOR ANALYSIS PURPOSES ONLY

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.29	209	1.17	N.A.	F			
EB TR		.14	794	.56	14.8	B	EB	N A.	F
WB L		.18	169	.73	31	D			
WB TR		.13	754	.5	14.4	B	WB	18 5	C
NB Lper			90	.07					
NB Lpro		.01	264	.06	19	C			
NB TR	*	.49	1660	.89	15	C	NB	15 1	C
SB LTR		.37	1555	.73	10.9	B	SB	10.9	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.78	.88	22.5	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	220	112	21	0
THRU	378	268	1098	840
RIGHT	23	73	232	184
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F

1985 HCM: SIGNALIZED INTERSECTIONS

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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: UIDC BUILD WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.4	142	1.59	N.A.	F			
EB TR		.08	794	.34	13.5	B	EB	N.A.	F
WB L		.29	241	1.15	N.A.	F			
WB TR		.19	778	.75	19.7	C	WB	55.9	E
NB Lper			90	.1					
NB Lpro	*	.02	264	.11	19.3	C			
NB TR		.42	1677	.77	10	B	NB	10.2	B
SB LTR	*	.54	1224	1.07	53.3	E	SB	53.3	E

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.95	1.08	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	201	247	33	52
THRU	205	406	961	936
RIGHT	22	91	128	126
R O R	0	0	0	0

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: UIDC BUILD WITH REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LT		.21	1615	.31	2.2	A	EB	2.2	A
WB TR	*	.3	1188	.63	8.1	B	WB	8.1	B
NB LTR		.11	318	.44	15.9	C	NB	15.9	C
SB LR	*	.37	290	1.51	N.A.	F	SB	N.A.	F

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.68	.74	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	120	0	14	157
THRU	122	520	79	0
RIGHT	0	147	38	260
R O R	0	0	0	0

R O R = RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/18/86
AREA TYPE: CBD
MISC. INFO: UIDC PARCEL ONE-FIVE BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LT	*	.34	1638	.5	3.2	A	EB	3.2	A
WB TR		.27	1364	.47	5.3	B	WB	5.3	B
NB LTR		.17	361	.68	21.2	C	NB	21.2	C
SB LR	*	.26	243	1.02	N.A.	F	SB	N.A.	F

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.61	.65	13.6	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	224	0	18	91
THRU	516	415	166	0
RIGHT	0	160	45	141
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE 1989-BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
NB TR	*	.41	2011	.06	18.8	C	NB	18.8	C
NB L	*	.4	1290	.85	21.7	C			
NB T		.25	1508	.54	10.5	B	NB	16.9	C
NB R		0	754	0	0	A	NB	16.9	C
SB R		.1	1770	.2	8.5	B	SB	8.5	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.8	.86	17	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	939	0
THRU	0	1183	.698	0
RIGHT	0	259	0	294
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

Vanasse / Hangen Associates

INTERSECTION: ST. JAMES ST AND DARTMOUTH ST.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE 1989 FULL BUILD

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
NB TR	*	.29	2084	.61	12.5	B	NB	12.5	B
NB L		.24	1290	.52	14.4	B			
NB T	*	.39	1508	.83	18.5	C	NB	17.1	C
NB R		0	754	0	0	A	NB	17.1	C
SB R		.02	1770	.05	7.9	B	SB	7.9	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.68	.72	15.1	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	0	0	576	0
THRU	0	809	1078	0
RIGHT	0	115	0	75
R-O-R	0	0	0	0

R-O-R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 10/31/86 11/4/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE (1647) 1989-~~NO~~ BUILD BUILD

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP					BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L		.2	407	.65	23.4	C			
EB TR	*	.33	2306	.41	1	A	EB	6	B
WB L	*	.04	156	.33	28.5	D			
WB T		.17	2986	.26	3.4	A	WB	4.7	A
WB R		.21	854	.33	3.7	A	WB	4.7	A
NB R		.01	165	.1	29.5	D	NB	29.5	D
SB R	*	.07	445	.22	15.3	C	SB	15.3	C

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.44	.49	5.9	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	249	49	0	0
THRU	819	672	0	0
RIGHT	21	266	15	94
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen

INTERSECTION: HUNTINGTON AVE AND HARCOURT/RING
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/13/86
AREA TYPE: CBD
MISC.INFO: UIDC PARCEL ONE 1989-BUILD

A) CAPACITY AND LEVEL OF SERVICE

		BY LANE GROUP					BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB L	*	.14	366	.52	24.6	C			
EB TR		.31	2381	.37	.9	A	EB	5.1	B
WB L		.09	140	.95	N.A.	F			
WB T	*	.3	3159	.45	3.7	A	WB	9.6	B
WB R		.09	904	.13	2.8	A	WB	9.6	B
NB R		0	148	.03	33.4	D	NB	33.4	D
SB R	*	.19	401	.71	24.8	C	SB	24.8	C

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.63	.69	9.5	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	178	125	0	0
THRU	775	1207	0	0
RIGHT	10	113	5	269
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse Hangen Brustlin Inc

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: March 11, 1987
AREA TYPE: CBD
MISC INFO: BUILD CONDITIONS-REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.45	764	1.1	59.8	E	EB	59.8	E
WB L		.3	192	.73	23.2	C			
WB T		.21	663	.5	8	B	WB	10.7	B
WB R		.12	617	.23	4 6	A	WB	10 7	B
NB LTR	*	.59	423	1.52	N A.	F	NB	N A.	F
SB Lper			96	57					
SB Lpro	*	.06	163	.58	24.7	C			
SB TR		.18	716	.34	6.5	B	SB	13 4	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	1.11	1.2	N.A.	F

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	73	133	76	140
THRU	550	313	496	154
RIGHT	166	132	33	75
R-O R	0	0	0	0

R-O R = RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: UIDC BUILD REVISED VOLUMES

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.18	990	.42	7.5	B	EB	7.5	B
WB LT	*	.18	1167	.43	7.5	B	WB	7.1	B
WB R		.06	617	.11	4.3	A	WB	7.1	B
NB LTR		.31	386	.8	19.9	C	NB	19.9	C
SB LTR	*	.32	1402	.59	8.1	B	SB	8.1	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.49	.53	9.4	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	89	68	26	91
THRU	220	376	238	377
RIGHT	67	64	26	318
R O R	0	0	0	0

R O R - RIGHT-ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

Vanasse / Hangen Associates

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/5/86
AREA TYPE: CBD
MISC. INFO: UIDC PARCEL ONE 1909 BUILD

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
	BY LANE GROUP						BY APPROACH		
EB	L *	.49	1165	1.12	N.A.	F			
EB	T	.31	1404	.75	13	B	EB	41.1	E
EB	R	.46	1219	.49	.4	A	EB	41.1	E
NB	TR *	.27	1337	.56	11.4	B	NB	11.4	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.76	.82	35.1	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	1168	0	0	0
THRU	941	0	591	0
RIGHT	567	0	77	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS

Vanasse / Hangen

INTERSECTION: STUART STREET AND DARTMOUTH STREET
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/25/86
AREA TYPE: CBD
MISC. INFO: UIDC FULL BUILD

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
	BY LANE GROUP						BY APPROACH		
EB	L	.36	1165	.81	18.1	C			
EB	T *	.38	1404	.66	17.4	C	EB	15	B
EB	R	.3	1219	.31	.2	A	EB	15	B
NB	TR *	.34	1256	.71	13.5	B	NB	13.5	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.72	.78	14.6	B

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	848	0	0	0
THRU	1077	0	588	0
RIGHT	175	0	207	0
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

SIGNALIZED INTERSECTION ANALYSIS RESULTS-MITIGATION MEASURES

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/7/86
AREA TYPE: CBD
MISC.INFO: MITIGATION MEASURE REMOVE 100' OF PARKING

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR		.08	243	.35	24.3	C	EB	24.3	C
WB LTR	*	.09	246	.39	24.8	C	WB	24.8	C
NB LTR	*	.51	1527	.93	20.9	C	NB	20.9	C
SB LTR		.36	1577	.61	9	B	SB	9	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.6	.66	16.6	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	14	38	91	20
THRU	11	27	1190	814
RIGHT	58	28	110	59
R-O-R	0	0	90	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM:SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: ST. BOTOLPH ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC.INFO: MITIGATION-REMOVE PARKING W/REVISED VOLS

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.21	187	.88	51.4	E	EB	51.4	E
WB LTR		.19	213	.79	37.6	D	WB	37.6	D
NB LTR	*	.5	1428	.9	19.2	C	NB	19.2	C
SB LTR		.42	1456	.73	10.6	B	SB	10.6	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.71	.78	19.1	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	103	30	111	42
THRU	25	26	1077	892
RIGHT	31	129	95	46
R-O-R	0	0	90	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: BOYLSTON ST. AND MASS AVE.
ANALYST: WLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/7/86
AREA TYPE: CBD
MISC. INFO: MITIGATION-ADD RT CAPACITY-MOVE TAXI STAND EB APPROACH

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB TR	*	.24	817	.91	33.6	D	EB	33.6	D
WB TR		.07	734	.27	16.2	C	WB	16.2	C
NB TR		.26	2063	.54	10.2	B	NB	10.2	B
SB Lper			139	.74					
SB Lpro		.15	302	.74	32.8	D			
SB T	*	.52	1127	.73	6.9	B	SB	13.7	B
SB R		.06	709	.09	3	A	SB	13.7	B

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.76	.81	17.2	C

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	60	0	0	316
THRU	610	95	781	803
RIGHT	151	89	202	59
R-O-R	75	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS 1

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Vanasse / Hangen Associates

INTERSECTION: COLUMBUS AVENUE AND MASS AVENUE
ANALYST: WLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/19/86
AREA TYPE: CBD
MISC. INFO: MITIGATION-MOVE PKG SB & IMPR PHASING

A) CAPACITY AND LEVEL OF SERVICE

BY LANE GROUP							BY APPROACH		
LANE GROUP	CRIT. MVMT.	V/S FLOW RATIO	CAP.	I V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB Lper			95	1.18					
EB Lpro	*	.07	96	1.19	N.A.	F			
EB TR		.08	992	.27	11.3	B	EB	N.A.	F
WB L		.29	241	1.15	N.A.	F			
WB TR	*	.19	778	.75	19.7	C	WB	55.9	E
NB Lper			90	.1					
NB Lpro	*	.02	261	.11	20	C			
NB TR		.42	1186	.86	16	C	NB	16.1	C
SB Lper			90	.21					
SB Lpro		.03	179	.22	21.8	C			
SB TR	*	.44	1253	1	33.2	D	SB	32.7	D

NOTE: DELAY MEANINGLESS WHEN I > 1.2

INTERSECTION:	SUM (V/S)c	Xc	DELAY	LOS
	.72	.81	39.5	D

B) INPUT VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	201	247	33	52
THRU	205	406	961	936
RIGHT	22	91	128	126
R-O-R	0	0	0	0

R-O-R = RIGHT-ON-RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION F.

1985 HCM: SIGNALIZED INTERSECTIONS SUMMARY REPORT

Columbus / Dartmouth

INTERSECTION: COLUMBUS AVENUE AND DARTMOUTH STREET
ANALYST: MLS
TIME OF ANALYSIS: AM PEAK HOUR
DATE OF ANALYSIS: 11/10/86
AREA TYPE: CBD
MISC INFO: MITIGATION OPTIMIZE SIGNAL TIMING

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT MVMT	V/S FLOW RATIO	CAP	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LTR	*	.1	789	1.09	N.A.	F	EB	N.A.	F
WB Lper			80	.9					
WB Lpro	*	.05	77	.9	N.A.	F			
WB T		.41	518	.44	15.6	C	WB	75.0	D
WB R		.17	1079	.19	5	A	WB	75.0	D
NB LTR	*	.50	531	1.09	N.A.	F	NB	N.A.	F
SB Lper			200	.55					
SB Lpro	*	.07	61	.56	19.1	C			
SB TR		.16	850	.70	6.1	B	SB	11.7	B

NOTE: DELAY MEANINGLESS WHEN X > 1.2

INTERSECTION:	SUM (V/S) crit	X c	DELAY	LOS
	.975	1.05	N/A	F

B) TRAFFIC VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	71	136	76	180
THRU	530	311	574	154
RIGHT	166	157	11	75
R O R	0	0	0	0

R O R - RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION E.

1985 HCM: SIGNALIZED INTERSECTIONS SUMMARY REPORT

Columbus / [illegible]

INTERSECTION: COLUMBUS AVE AND W NEWTON ST
ANALYST: MLS
TIME OF ANALYSIS: PM PEAK HOUR
DATE OF ANALYSIS: 11/13/86
AREA TYPE: CBD
MISC INFO: MITIGATION ALLOW RTOR AND IMPROVE PHASING

A) CAPACITY AND LEVEL OF SERVICE

LANE GROUP	CRIT MVMT	V/S FLOW RATIO	CAP	X V/C RATIO	STOPPED DELAY (SEC/VEH)	LOS	APPROACH	STOPPED DELAY (SEC/VEH)	LOS
EB LT		.41	765	.51	7.9	B	EB	7.9	B
WB TR	*	.5	1066	.46	11.5	B	WB	11.5	B
NB LTR		.11	446	.21	6.3	B	NB	6.3	B
SB TR	*	.38	650	.74	12.1	B	SB	12.1	B

INTERSECTION:	SUM (V/S) crit	X c	DELAY	LOS
	.611	.74	10.2	B

B) TRAFFIC VOLUMES

MVMT	EASTBOUND	WESTBOUND	NORTHBOUND	SOUTHBOUND
LEFT	176	0	14	157
THRU	577	576	43	0
RIGHT	0	157	18	260
R O R	0	0	0	0

R O R - RIGHT ON RED
VOLUMES DO NOT REFLECT GROWTH FACTOR. SEE SECTION E.

SUPPLEMENTARY TRAFFIC COUNT DATA

VANNASSE/HANGEN/BRUSTLIN
HOURLY, 2 CHANNEL VEHICLE COUNT
CORRECTION FACTOR: 1.00

REFERENCE: 1547
LOCATION : ST BOTOLPHS WEST OF DURHAM
WEATHER : SNOWY
OPERATOR : RW

FILENAME: ST BOT
WEEK OF MONDAY 3 / 2 / 87

HOUR	MONDAY 2		TUESDAY 3		WEDNESDAY 4		THURSDAY 5		FRIDAY 6		SATURDAY 7		SUNDAY 8		WEEKDAY AVERAGE	
BEGINS	W	E	W	E	W	E	W	E	W	E	W	E	W	E	W	E
12 AM	*	*	20	21	*	*	*	*	*	*	*	*	*	*	20	21
1	*	*	17	9	*	*	*	*	*	*	*	*	*	*	17	9
2	*	*	10	8	*	*	*	*	*	*	*	*	*	*	10	8
3	*	*	6	8	*	*	*	*	*	*	*	*	*	*	6	8
4	*	*	7	3	*	*	*	*	*	*	*	*	*	*	7	3
5	*	*	20	17	*	*	*	*	*	*	*	*	*	*	20	17
6	*	*	35	37	*	*	*	*	*	*	*	*	*	*	35	37
7	*	*	70	75	*	*	*	*	*	*	*	*	*	*	70	75
8	*	*	92	86	*	*	*	*	*	*	*	*	*	*	92	86
9	*	*	73	72	*	*	*	*	*	*	*	*	*	*	73	72
10	*	*	73	59	*	*	*	*	*	*	*	*	*	*	73	59
11	*	*	78	48	*	*	*	*	*	*	*	*	*	*	78	48
12 PM	73	65	*	*	*	*	*	*	*	*	*	*	*	*	73	65
1	73	67	*	*	*	*	*	*	*	*	*	*	*	*	73	67
2	70	63	*	*	*	*	*	*	*	*	*	*	*	*	70	63
3	92	75	*	*	*	*	*	*	*	*	*	*	*	*	92	75
4	117	76	*	*	*	*	*	*	*	*	*	*	*	*	117	76
5	147	100	*	*	*	*	*	*	*	*	*	*	*	*	147	100
6	107	54	*	*	*	*	*	*	*	*	*	*	*	*	107	54
7	97	55	*	*	*	*	*	*	*	*	*	*	*	*	97	55
8	83	47	*	*	*	*	*	*	*	*	*	*	*	*	83	47
9	55	39	*	*	*	*	*	*	*	*	*	*	*	*	55	39
10	61	42	*	*	*	*	*	*	*	*	*	*	*	*	61	42
11	48	37	*	*	*	*	*	*	*	*	*	*	*	*	48	37
TOTALS	1023	720	501	443	*	*	*	*	*	*	*	*	*	*	1524	1163

COMBINED TOTALS

12	*	41	*	*	*	*	*	41
1	*	26	*	*	*	*	*	26
2	*	18	*	*	*	*	*	18
3	*	14	*	*	*	*	*	14
4	*	10	*	*	*	*	*	10
5	*	37	*	*	*	*	*	37
6	*	72	*	*	*	*	*	72
7	*	145	*	*	*	*	*	145
8	*	178	*	*	*	*	*	178
9	*	145	*	*	*	*	*	145
10	*	132	*	*	*	*	*	132
11	*	126	*	*	*	*	*	126
12	138	*	*	*	*	*	*	138
1	140	*	*	*	*	*	*	140
2	133	*	*	*	*	*	*	133
3	167	*	*	*	*	*	*	167
4	193	*	*	*	*	*	*	193
5	247	*	*	*	*	*	*	247
6	161	*	*	*	*	*	*	161
7	152	*	*	*	*	*	*	152
8	130	*	*	*	*	*	*	130
9	94	*	*	*	*	*	*	94
10	103	*	*	*	*	*	*	103
11	85	*	*	*	*	*	*	85
TOTALS	1743	944	*	*	*	*	*	2687

VANNASSE/HANSEN/BRUSTLIN
HOURLY, 2 CHANNEL VEHICLE COUNT
CORRECTION FACTOR: 1.00

REFERENCE: 1647
LOCATION : ST BOTOPHLS W OF GARRISON
WEATHER : SNOWY
OPERATOR : RW

FILENAME: ST BOT 6
WEEK OF MONDAY 3 / 2 / 87

HOUR BEGINS	MONDAY 2 E	MONDAY 2 W	TUESDAY 3 E	TUESDAY 3 W	WEDNESDAY 4 E	WEDNESDAY 4 W	THURSDAY 5 E	THURSDAY 5 W	FRIDAY 6 E	FRIDAY 6 W	SATURDAY 7 E	SATURDAY 7 W	SUNDAY 8 E	SUNDAY 8 W	WEEKDAY AVERAGE E	WEEKDAY AVERAGE W
12 AM	*	*	9	10	*	*	*	*	*	*	*	*	*	*	9	10
1	*	*	2	5	*	*	*	*	*	*	*	*	*	*	2	5
2	*	*	8	5	*	*	*	*	*	*	*	*	*	*	8	5
3	*	*	5	6	*	*	*	*	*	*	*	*	*	*	5	6
4	*	*	2	3	*	*	*	*	*	*	*	*	*	*	2	3
5	*	*	18	11	*	*	*	*	*	*	*	*	*	*	18	11
6	*	*	58	18	*	*	*	*	*	*	*	*	*	*	58	18
7	*	*	175	41	*	*	*	*	*	*	*	*	*	*	175	41
8	*	*	182	38	*	*	*	*	*	*	*	*	*	*	182	38
9	*	*	85	28	*	*	*	*	*	*	*	*	*	*	85	28
10	*	*	65	34	*	*	*	*	*	*	*	*	*	*	65	34
11	*	*	60	26	*	*	*	*	*	*	*	*	*	*	60	26
12 PM	62	32	*	*	*	*	*	*	*	*	*	*	*	*	62	32
1	61	31	*	*	*	*	*	*	*	*	*	*	*	*	61	31
2	62	35	*	*	*	*	*	*	*	*	*	*	*	*	62	35
3	78	45	*	*	*	*	*	*	*	*	*	*	*	*	78	45
4	105	30	*	*	*	*	*	*	*	*	*	*	*	*	105	30
5	60	48	*	*	*	*	*	*	*	*	*	*	*	*	60	48
6	56	31	*	*	*	*	*	*	*	*	*	*	*	*	56	31
7	62	35	*	*	*	*	*	*	*	*	*	*	*	*	62	35
8	31	23	*	*	*	*	*	*	*	*	*	*	*	*	31	23
9	28	29	*	*	*	*	*	*	*	*	*	*	*	*	28	29
10	19	16	*	*	*	*	*	*	*	*	*	*	*	*	19	16
11	19	24	*	*	*	*	*	*	*	*	*	*	*	*	19	24
TOTALS	643	379	669	225	*	*	*	*	*	*	*	*	*	*	1312	604

COMBINED TOTALS

HOUR	MONDAY 2	TUESDAY 3	WEDNESDAY 4	THURSDAY 5	FRIDAY 6	SATURDAY 7	SUNDAY 8	WEEKDAY AVERAGE
12	*	19	*	*	*	*	*	19
1	*	7	*	*	*	*	*	7
2	*	13	*	*	*	*	*	13
3	*	11	*	*	*	*	*	11
4	*	5	*	*	*	*	*	5
5	*	29	*	*	*	*	*	29
6	*	76	*	*	*	*	*	76
7	*	216	*	*	*	*	*	216
8	*	220	*	*	*	*	*	220
9	*	113	*	*	*	*	*	113
10	*	99	*	*	*	*	*	99
11	*	86	*	*	*	*	*	86
12	94	*	*	*	*	*	*	94
1	92	*	*	*	*	*	*	92
2	97	*	*	*	*	*	*	97
3	123	*	*	*	*	*	*	123
4	135	*	*	*	*	*	*	135
5	108	*	*	*	*	*	*	108
6	87	*	*	*	*	*	*	37
7	97	*	*	*	*	*	*	97
8	54	*	*	*	*	*	*	54
9	57	*	*	*	*	*	*	57
10	35	*	*	*	*	*	*	35
11	43	*	*	*	*	*	*	43
TOTALS	1022	894	*	*	*	*	*	1916